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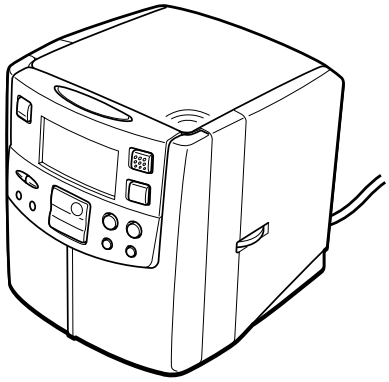
SERVICE

FR-CD2500 U(S),EZ(S)



SERVICE MANUAL

COMPACT DISC STEREO
RADIO RECEIVER

BASIC CD MECHANISM : DA11T3C

This Service Manual is the "Revision Publishing" and replaces "Simple Manual" (S/M Code No. 09-015-356-5T1).

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S/M Code No. 09-015-356-5R1

REVISION
DATA

SPECIFICATIONS

U MODEL

<Tuner section>	
Frequency range	FM: 87.5 – 108 MHz (100 kHz steps) AM: 530 – 1,710 kHz (10 kHz steps)
Antennas	FM wire antenna Ferrite bar antenna for AM
<CD player section>	
Tracking system	3-beam laser
Laser pickup	Semiconductor laser
D/A conversion	8-times oversampling digital filter + 1-bit DAC
Frequency response	20 – 20,000 Hz
<Common section>	
Power source	AC 120 V, 60 Hz
Output	750 mW + 750 mW (EIAJ)
Power consumption	15 W
Speaker	64 mm, 8 ohms (2)
Maximum outside dimensions (W H D)	156 170 195 mm (6 1/4 6 3/4 7 3/4 in.)
Weight	Approx. 1.65 kg (3.6 lbs.)

- Design and specifications are subject to change without notice.

EZ MODEL

<Tuner section>	
Frequency range	FM: 87.5 – 108 MHz (50 kHz steps) MW: 531 – 1,602 kHz (9 kHz steps) LW: 144 – 288 kHz (1 kHz steps)
Antennas	FM wire antenna Ferrite bar antenna for LW, MW
<CD player section>	
Tracking system	3-beam laser
Laser pickup	Semiconductor laser
D/A conversion	8-times oversampling digital filter + 1-bit DAC
Frequency response	20 – 20,000 Hz
<Common section>	
Power source	AC 230 V, 50 Hz
Output	750 mW + 750 mW (EIAJ)
Power consumption	15 W
Speaker	64 mm, 8 ohms (2)
Maximum outside dimensions (W × H × D)	156 × 170 × 195 mm
Weight	Approx. 1.71 kg

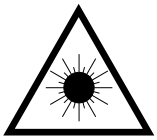
- Design and specifications are subject to change without notice.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynling laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

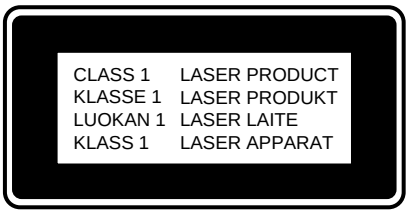
ATTENTION

L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL!

Usynlig laserstråling ved åbning, når sikkerhedsafbrydereer ude af funktion. Undgå udsættelse for stråling.

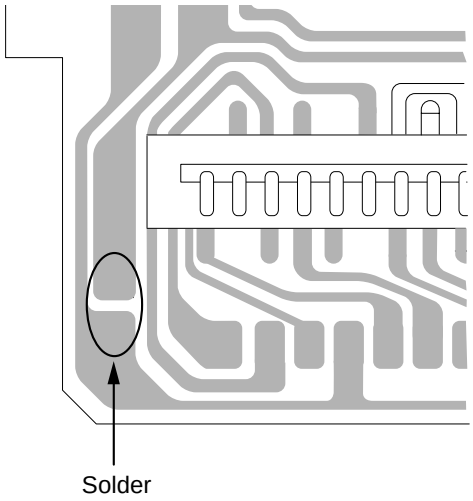
This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

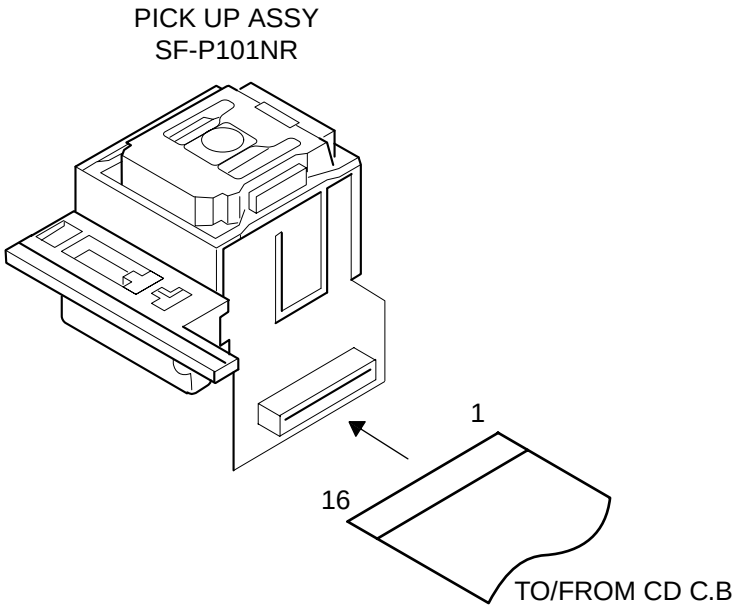


Precaution to replace Optical block (SF-P101NR)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

1) After the connection, remove solder shown in the right figure.





ELECTRICAL MAIN PARTS LIST-1/3

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC			
	8A-RU2-606-010		IC,TC9284BF
	8A-RU2-605-010		IC,TA2065F
	87-A20-157-010		IC,TA2092N
	87-A20-754-010		IC,BA4558N-DX
	87-A21-184-010		IC,TA2104AN
	8B-RD3-627-010		IC,TC9256P
	8A-RU2-603-010		IC,TDA2822M
	8B-RD3-613-010		IC,TMP87CM24AF
TRANSISTOR			
	8A-RU2-604-010		TR,3CA8550
	8A-RU2-602-010		TR,3DA8050
	8B-RD3-607-010		TR,2SB562B
	89-318-155-080		TR,2SC1815 (0.4W)
	87-026-215-080		TR,DTC114YS
	89-414-683-010		TR,2SD1468<CD2500EZSC>
	87-026-462-080		TR,2SC1740<CD2500EZSC>
	89-501-185-080		TR,2SK118
	87-A30-167-010		TR,2SB1566E
	87-A30-620-080		TR,DTC114ESA
	87-A30-622-080		TR,DTC114YSA
DIODE			
	87-070-345-080		DIODE,IN4148
	87-A40-226-080		VARI-CAP,SVC251SPA
	87-017-568-080		VARI-CAP,SVC342M/L
	87-A40-398-080		DIODE,1N4001
	8B-RD3-633-010		DIODE,RECTIFITERJ-05
	87-A40-358-080		ZENER,1N5232B
	87-017-105-080		ZENER,HZS7A3
	87-A40-029-080		ZENER,RD4.3B1ES
	8B-RD3-614-010		ZENER,DIODE3.3V
MAIN C.B			
BPF101	8B-RD3-631-010		FLTR,BPF GFMB3-1
C101	87-018-109-080		CAP,TC U 22P-50 J SL UP050
C105	87-018-134-080		CAPACITOR,TC-U 0.01-16
C106	87-018-149-080		CAP,TC U 15P-50 J CH UP050
C107	87-018-143-080		CAP,TC-U 4.7P-50 CH
C108	87-018-125-080		CAP, CER 330P-50V
C109	87-010-544-080		CAP,E 0.1-50 M 11L SME
C110	87-010-401-080		CAP, ELECT 1-50V
C111	87-010-401-080		CAP, ELECT 1-50V
C112	87-010-400-080		CAP,E 0.47-50 M 11L SME
C113	87-010-405-080		CAP, ELECT 10-50V
C114	87-018-205-080		CAP, CERA-SOL 0.022
C115	87-018-132-080		CAP, CER 2200P-16V
C117	87-018-205-080		CAP, CERA-SOL 0.022
C118	87-018-205-080		CAP, CERA-SOL 0.022
C119	87-010-235-080		CAP,E 470-16 SME
C120	87-010-263-080		CAP, ELECT 100-10V
C121	87-018-134-080		CAPACITOR,TC-U 0.01-16
C125	87-018-205-080		CAP, CERA-SOL 0.022
C126	87-018-205-080		CAP, CERA-SOL 0.022
C127	87-010-405-080		CAP, ELECT 10-50V
C128	87-018-209-080		CAP, CER 0.1-50V
C129	87-010-263-080		CAP, ELECT 100-10V
C130	87-018-209-080		CAP, CER 0.1-50V
C131	87-010-400-080		CAP, ELECT 0.47-50V
C132	87-018-205-080		CAP, CERA-SOL 0.022
C133	87-010-544-080		CAP,E 0.1-50 M 11L SME
C134	87-010-544-080		CAP,E 0.1-50 M 11L SME
C135	87-018-205-080		CAP, CERA-SOL 0.022
C136	87-018-205-080		CAP, CERA-SOL 0.022

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C137	87-010-404-080		CAP, ELECT 4.7-50V
C138	87-018-112-080		CAP,TC U 30P-50 J SL UP050
C139	87-018-112-080		CAP,TC U 30P-50 J SL UP050
C140	87-018-205-080		CAP, CERA-SOL 0.022
C141	87-010-101-080		CAP, ELECT 220-16
C142	87-018-134-080		CAPACITOR,TC-U 0.01-16
C143	87-018-134-080		CAPACITOR,TC-U 0.01-16
C144	87-018-134-080		CAPACITOR,TC-U 0.01-16
C145	87-018-134-080		CAPACITOR,TC-U 0.01-16
C146	87-018-134-080		CAPACITOR,TC-U 0.01-16
C148	87-018-205-080		CAP, CERA-SOL 0.022<CD2500EZSC>
C148	87-018-134-080		CAPACITOR,TC-U 0.01-16<CD2500USC>
C149	87-010-405-080		CAP, ELECT 10-50V
C152	87-018-117-080		CAP,TC U 68P-50 J SL UP050<CD2500EZSC>
C153	87-018-149-080		CAP,TC U 15P50 J CH UP050
C154	87-018-141-080		CAP,TC U 3.3P-50 K CH UP050
C155	87-018-126-080		CAP,TC U 390P-50 K B UP050
C156	87-018-127-080		CAP, CER 470P-50V<CD2500EZSC>
C157	87-018-205-080		CAP, CERA-SOL 0.022<CD2500EZSC>
C157	87-018-201-080		CAP,TC U 5600P-16 N X UP050<CD2500USC>
C158	87-018-134-080		CAPACITOR,TC-U 0.01-16
C159	87-018-134-080		CAPACITOR,TC-U 0.01-16
C161	87-012-286-080		C-CAP,U 0.01-25 K B
C201	87-018-127-080		CAP, CER 470P-50V
C202	87-018-127-080		CAP, CER 470P-50V
C205	87-010-401-080		CAP, ELECT 1-50V
C206	87-010-401-080		CAP, ELECT 1-50V
C207	87-010-401-080		CAP, ELECT 1-50V
C208	87-010-401-080		CAP, ELECT 1-50V
C209	87-018-127-080		CAP, CER 470P-50V
C210	87-018-127-080		CAP, CER 470P-50V
C211	87-010-401-080		CAP, ELECT 1-50V
C212	87-015-997-010		CAP, ELECT 2200UF-16V
C213	87-010-380-080		CAP, ELECT 47-16V
C214	87-010-380-080		CAP, ELECT 47-16V
C215	87-015-997-010		CAP, ELECT 2200UF-16V
C216	87-010-235-080		CAP,E 470-16 SME
C217	87-018-134-080		CAPACITOR,TC-U 0.01-16
C218	87-018-134-080		CAPACITOR,TC-U 0.01-16
C219	87-010-235-080		CAP,E 470-16 SME
C220	87-010-235-080		CAP,E 470-16 SME
C221	87-018-209-080		CAP, CER 0.1-50V
C222	87-018-209-080		CAP, CER 0.1-50V
C223	87-010-405-080		CAP, ELECT 10-50V
C224	87-010-235-080		CAP,E 470-16 SME
C225	87-010-235-080		CAP,E 470-16 SME
C226	87-018-134-080		CAPACITOR,TC-U 0.01-16
C227	87-018-134-080		CAPACITOR,TC-U 0.01-16
C228	87-018-134-080		CAPACITOR,TC-U 0.01-16
C229	87-018-134-080		CAPACITOR,TC-U 0.01-16
C230	87-010-236-080		CAP,E 1000-10 M SME
C231	87-018-205-080		CAP, CERA-SOL 0.022
CF101	87-A91-162-010		FLTR,PFS450A7
CF103	87-A90-991-010		FLTR,SFE10.7 MS239-A
CON202	8B-RD3-621-010		WIRE,ASSY 4P SP
CON203	8B-RD3-619-010		WIRE,CONN 5P 63
⚠F201	87-035-428-010		FUSE,2A 125V T 237<CD2500EZSC>
HP201	87-A60-420-010		JACK,3.5 ST (MSC)
L102	8A-RU2-613-010		COIL,FM COIL4T 5MM
L103	8A-RU2-611-010		COIL,FM COIL3T
L104	87-005-239-080		COIL,100UH
L105	87-005-152-080		COIL,10UH
L151	S0-630-041-200		AM COIL 63TÅF0 USTC
L152	S1-750-041-200		LW ANT COIL 175T<CD2500EZSC>
SP1	8A-RU2-662-010		SPKR, F66RZ3201

ELECTRICAL MAIN PARTS LIST-2/3

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
SP2	8A-RU2-662-010		SPKR, F66RZ3201
SW417	8B-RD3-639-010		SW,TACT 1120V-4
T103	8A-RU2-607-010		IFT,4A224R
T151	8B-RD3-636-010		COIL,MW OSC3939
T152	8B-RD3-637-010		COIL,LW OSC0644<CD2500EZSC>
TC102	87-011-155-010		CAPACITOR TRIMMER 1P
TC151	87-A91-684-010		TRIMMER,CER 30P 4.0X4.5 ECRLA0
TC152	87-A91-684-010		TRIMMER,CER 30P 4.0X4.5 ECRLA0 <CD2500EZSC>
VR201	8B-RD3-606-010		VR,SL 50KC*2
WH202	8B-RD3-622-010		SOCKET,6P VDD
WH203	8B-RD3-618-010		WIRE,ASSY 6P VDD
X101	87-KTD-602-010		VIB,XTAL 7.2MHZ
CD C.B			
C1	87-018-127-080		CAP, CER 470P-50V
C2	87-A10-307-080		CAP,M 0.1-50 J
C3	87-018-208-080		CAP 0.047-50F
C4	87-018-209-080		CAP, CER 0.1-50V
C8	87-018-140-080		CAP,TC U 2.2P-50 K CH UP050
C9	87-010-401-080		CAP, ELECT 1-50V
C12	87-010-404-080		CAP, ELECT 4.7-50V
C13	87-018-110-080		CAP, CERA-SOL SS 24P
C15	87-018-111-080		CAP, CERA-SOL SS 27P
C16	87-010-380-080		CAP, ELECT 47-16V
C17	87-018-208-080		CAP 0.047-50F
C18	87-018-119-080		CAP, CER 100P-50V
C19	87-018-110-080		CAP, CERA-SOL SS 24P
C20	87-010-405-080		CAP, ELECT 10-50V
C21	87-018-133-080		CAPACITOR,CER 4700P-16V
C22	87-018-209-080		CAP, CER 0.1-50V
C23	87-018-209-080		CAP, CER 0.1-50V
C24	87-A10-025-080		C-CAP,U 0.22-16 Z F
C26	87-010-788-080		C-CAP,U 0.033-25 Z F
C27	87-010-382-080		CAP, ELECT 22-25V
C28	87-018-209-080		CAP, CER 0.1-50V
C29	87-010-380-080		CAP, ELECT 47-16V
C30	87-018-208-080		CAP 0.047-50F
C31	87-010-380-080		CAP, ELECT 47-16V
C32	87-018-208-080		CAP 0.047-50F
C33	87-018-134-080		CAPACITOR,TC-U 0.01-16
C34	87-010-263-080		CAP, ELECT 100-10V
C35	87-018-209-080		CAP, CER 0.1-50V
C36	87-018-209-080		CAP, CER 0.1-50V
C37	87-010-405-080		CAP, ELECT 10-50V
C38	87-010-380-080		CAP, ELECT 47-16V
C39	87-018-209-080		CAP, CER 0.1-50V
C40	87-012-274-080		C-CAP,U 1000P-50 K B
C41	87-010-263-080		CAP, ELECT 100-10V
C43	87-010-263-080		CAP, ELECT 100-10V
C45	87-018-209-080		CAP, CER 0.1-50V
C46	87-010-101-080		CAP, ELECT 220-16
C47	87-018-134-080		CAPACITOR,TC-U 0.01-16
C48	87-010-101-080		CAP, ELECT 220-16
C49	87-018-133-080		CAPACITOR,CER 4700P-16V
C50	87-010-405-080		CAP, ELECT 10-50V
C51	87-018-119-080		CAP, CER 100P-50V
C52	87-018-119-080		CAP, CER 100P-50V
C53	87-010-263-080		CAP, ELECT 100-10V
C54	87-010-263-080		CAP, ELECT 100-10V
C55	87-010-404-080		CAP, ELECT 4.7-50V
C56	87-010-404-080		CAP, ELECT 4.7-50V
C57	87-018-111-080		CAP, CERA-SOL SS 27P
C58	87-018-111-080		CAP, CERA-SOL SS 27P
C59	87-018-119-080		CAP, CER 100P-50V
C60	87-018-119-080		CAP, CER 100P-50V
C61	87-010-263-080		CAP, ELECT 100-10V
C62	87-018-134-080		CAPACITOR,TC-U 0.01-16
C63	87-018-209-080		CAP, CER 0.1-50V
C64	87-018-209-080		CAP, CER 0.1-50V
C65	87-010-263-080		CAP, ELECT 100-10V
C66	87-018-209-080		CAP, CER 0.1-50V
C68	87-010-405-080		CAP, ELECT 10-50V
C69	87-018-209-080		CAP, CER 0.1-50V
C71	87-018-209-080		CAP, CER 0.1-50V
C73	87-018-127-080		CAP, CER 470P-50V
C74	87-018-127-080		CAP, CER 470P-50V
C80	87-010-405-080		CAP, ELECT 10-50V
CN1	8B-RD3-609-010		SOCKET,16P FFC
CN2	8B-RD3-610-010		SOCKET,2P HEADER
CON1	8B-RD3-608-010		CABLE,FFCP-16 L-65
CON444	8B-RD3-638-010		SOCKET,10P CD
CX101	8A-RU2-632-010		FLTR,16.93M RESONATOR
JW3	S0-102-260-000		INDUCTOR 22UH
L1	87-005-239-080		COIL,100UH
L2	87-005-239-080		COIL,100UH
L3	8A-RU2-634-010		COIL,CORE100MHZ
L11	87-005-239-080		COIL,100UH
L12	8A-RU2-634-010		COIL,CORE100MHZ
R72	87-018-119-080		CAP, CER 100P-50V
VR1	8A-RU2-631-010		SFR, KVSF637AB
VR2	8A-RU2-630-010		SFR,100K EVND8AV06P
WH2	8B-RD3-610-010		SOCKET,2P HEADER
CONTROL C.B			
B201	8B-RD3-616-010		LAMP,8V 60MA
B202	8B-RD3-616-010		LAMP,8V 60MA
C401	87-010-831-080		C-CAP,U,0.1-16F
C402	87-010-831-080		C-CAP,U,0.1-16F
C403	87-010-831-080		C-CAP,U,0.1-16F
C404	87-015-695-080		CAP,E 1-50 M 7L SRA
C405	87-010-787-080		CAP, U 0.022-25
C406	87-012-183-080		C-CAP,U 30P-50CH
C407	87-012-183-080		C-CAP,U 30P-50CH
C408	87-012-199-080		C-CAP,U 220P-50 J CH
C409	87-012-184-080		C-CAP,U 33P-50 J CH
C410	87-012-184-080		C-CAP,U 33P-50 J CH
C411	87-010-831-080		C-CAP,U,0.1-16F
C415	87-010-831-080		C-CAP,U,0.1-16F
C416	87-010-526-040		CAP,E 120-16 M 105 SXE
C417	87-010-831-080		C-CAP,U,0.1-16F
C418	87-015-680-080		CAP,E 47-10 M 7L SRA
C441	87-012-199-080		CAP,U 220P-50 J CH
C442	87-012-282-080		C-CAP,U 4700P-50 K B
C443	87-012-286-080		C-CAP,U 0.01-25 K B
C444	87-012-286-080		C-CAP,U 0.01-25 K B
C445	87-018-205-080		CAP, CERA-SOL 0.022
C446	87-018-208-080		CAP 0.047-50F
CON402	S1-300-572-000		CONN, 13P
DP401	8B-RD3-615-010		LCD,CD TUNERBRD-3
JW427	S7-006-307-080		COIL 220UH
JW433	S7-006-307-080		COIL 220UH
SW401	8A-RU2-623-010		SW,TACT 5MM
SW402	8A-RU2-623-010		SW,TACT 5MM
SW403	8A-RU2-623-010		SW,TACT 5MM
SW404	8A-RU2-623-010		SW,TACT 5MM
SW406	8A-RU2-623-010		SW,TACT 5MM
SW407	8A-RU2-623-010		SW,TACT 5MM
SW408	8A-RU2-623-010		SW,TACT 5MM
SW409	8A-RU2-623-010		SW,TACT 5MM

ELECTRICAL MAIN PARTS LIST-3/3

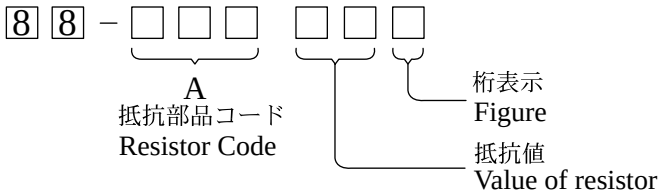
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
SW410	8A-RU2-623-010		SW,TACT 5MM
SW411	8A-RU2-623-010		SW,TACT 5MM
SW412	8A-RU2-623-010		SW,TACT 5MM
SW413	8A-RU2-623-010		SW,TACT 5MM
SW414	8A-RU2-623-010		SW,TACT 5MM
SW415	8A-RU2-623-010		SW,TACT 5MM
SW416	8B-RD3-639-010		SW,TACT 1120V-4
SW417	8A-RU2-623-010		SW,TACT 5MM
X401	87-A70-047-080		VIB,CER 4MHZ EFOEC4004T4
X402	87-A70-170-010		VIB,XTAL 32.768KHZ

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
POWER C.B			
⚠J1	8A-RU2-664-010		AC CORD, SPT-2
⚠PT1	8A-RU2-663-010		TRANS, 120/10<CD2500USC>
MOTOR C.B			
M2	S0-M10-A09-700		MOTOR SLED ASSY
PIN3	S2-369-750-000		PLUG,6P
SW1	S4-S13-A01-600		SW,LEAF

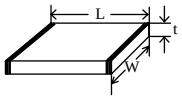
- Regarding connectors, they are not stocked as they are not the initial order items.
  The connectors are available after they are supplied from connector manufacturers upon the order is received.

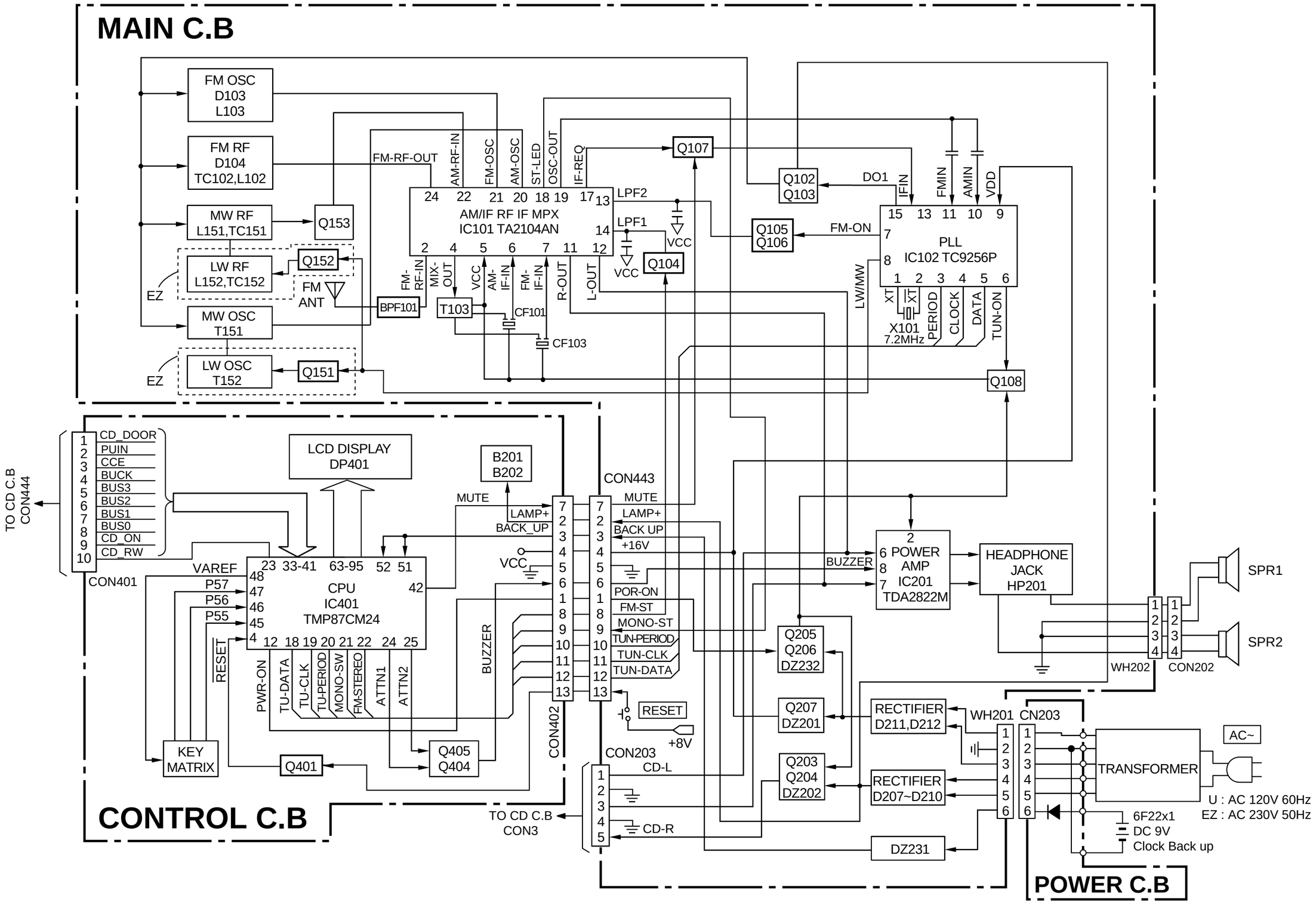
○チップ抵抗部品コード／CHIP RESISTOR PART CODE

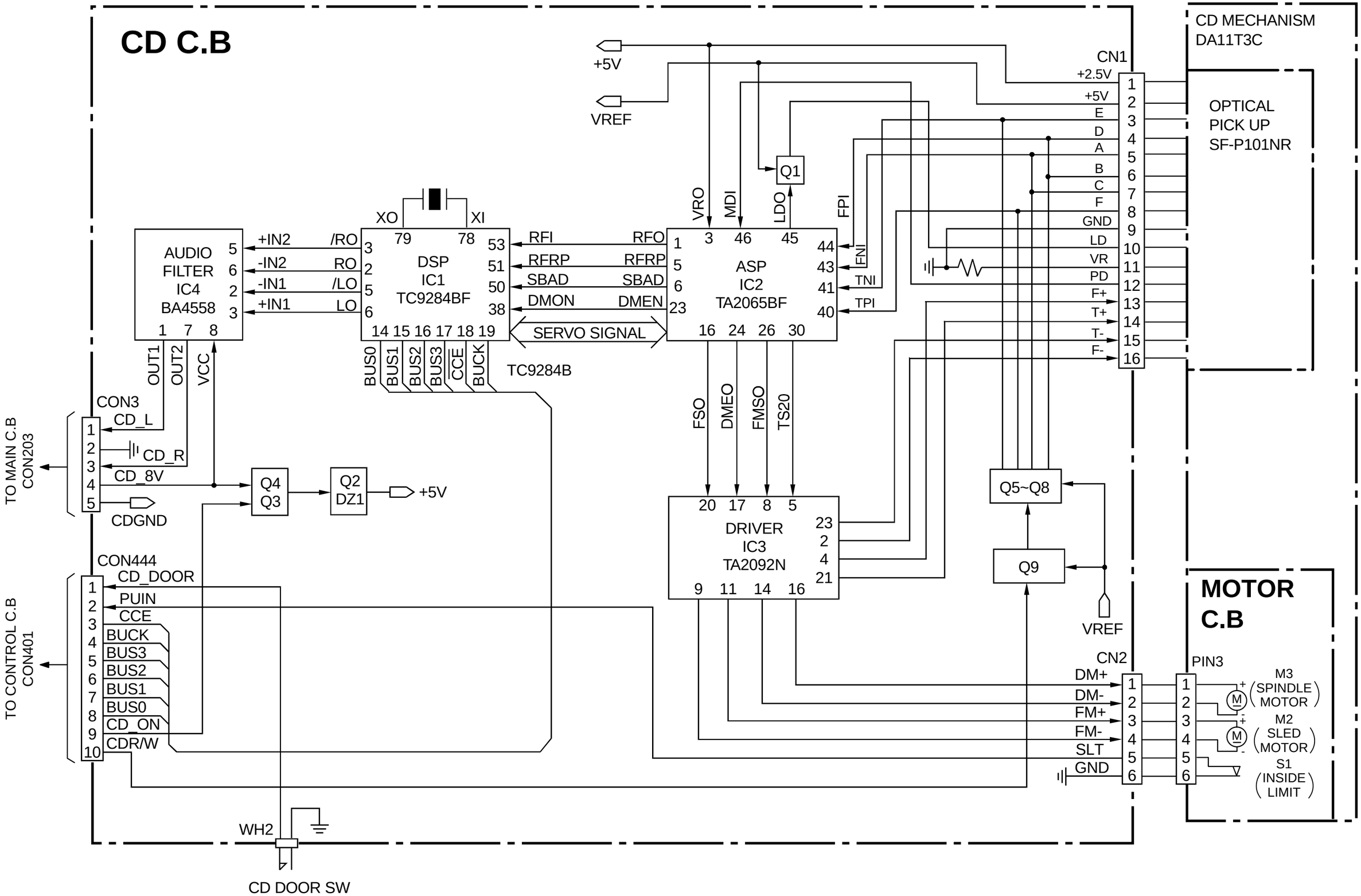
チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm) 外形／Form	L	W	t	抵抗コード Resistor Code : A
1/16W	1005	± 5%	CJ		1.0	0.5	0.35	104
1/16W	1608	± 5%	CJ		1.6	0.8	0.45	108
1/10W	2125	± 5%	CJ		2	1.25	0.45	118
1/8W	3216	± 5%	CJ		3.2	1.6	0.55	128

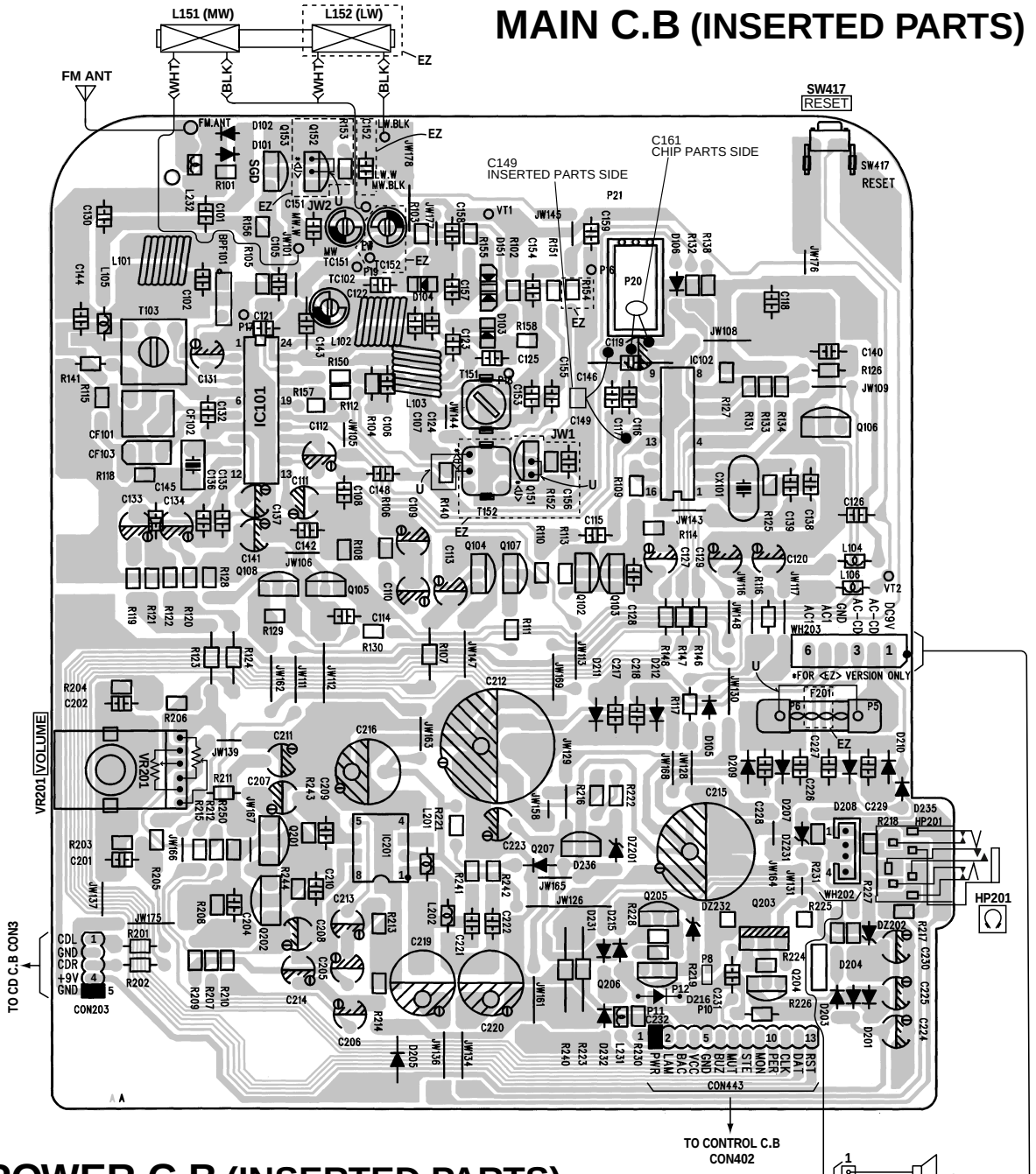

MAIN C.B
FM OSC
D103
L103
FM RF
D104
TC102,L102
MW RF
L151,TC151
Q153
LW RF
L152,TC152
Q152
FM
ANT
EZ
MW OSC
T151
LW OSC
T152
Q151
BPF101
T103
CF101
CF103
FM-RF-OUT
AM-RF-IN
FM-OSC
AM-OSC
ST-LED
OSC-OUT
IF-REQ
AM/IF RF IF MPX
IC101 TA2104AN
LPF2
LPF1
VCC
Q104
Q107
Q102
Q103
DO1
IFIN
FMIN
AMIN
VDD
Q105
Q106
FM-ON
PLL
IC102 TC9256P
XT
PERIOD
CLOCK
DATA
TUN-ON
X101
7.2MHz
LW/MW
Q108
CONTROL C.B
CD_DOOR
PUIN
CCE
BUCK
BUS3
BUS2
BUS1
BUS0
CD_ON
CD_RW
TO CD C.B
CON444
CON401
LCD DISPLAY
DP401
B201
B202
MUTE
LAMP+
BACK_UP
VCC
VAREF
P57
P56
P55
RESET
CPU
IC401
TMP87CM24
PWR-ON
TU-DATA
TU-CLK
TU-PERIOD
MONO-SW
FM-STEREO
ATTN1
ATTN2
BUZZER
KEY
MATRIX
Q401
Q405
Q404
CON402
CON443
BACK UP
+16V
POR-ON
FM-ST
MONO-ST
TUN-PERIOD
TUN-CLK
TUN-DATA
RESET
+8V
CON203
CD-L
CD-R
TO CD C.B
CON3
2
6 POWER
8 AMP
7 IC201
TDA2822M
HEADPHONE
JACK
HP201
Q205
Q206
DZ232
Q207
DZ201
Q203
Q204
DZ202
RECTIFIER
D211,D212
RECTIFIER
D207~D210
DZ231
WH201
CN203
WH202
CON202
SPR1
SPR2
TRANSFORMER
AC~
U : AC 120V 60Hz
EZ : AC 230V 50Hz
6F22x1
DC 9V
Clock Back up
POWER C.B


CD C.B
CD MECHANISM
DA11T3C
OPTICAL
PICK UP
SF-P101NR
+5V
VREF
Q1
VRO
MDI
LDO
FPI
CN1
+2.5V
+5V
E
D
A
B
C
F
GND
LD
VR
PD
F+
T+
T-
F-
XO
XI
AUDIO
FILTER
IC4
BA4558
+IN2
-IN2
-IN1
+IN1
/RO
RO
/LO
LO
DSP
IC1
TC9284BF
RFI
RFRP
SBAD
DMON
RFO
RFRP
SBAD
DMEN
SERVO SIGNAL
ASP
IC2
TA2065BF
FNI
TNI
TPI
OUT1
OUT2
VCC
BUS0
BUS1
BUS2
BUS3
CCE
BUCK
TC9284B
FSO
DMEO
FMSO
TS20
CON3
CD_L
CD_R
CD_8V
CDGND
Q4
Q3
Q2
DZ1
+5V
TO MAIN C.B
CON203
DRIVER
IC3
TA2092N
Q5~Q8
Q9
VREF
CON444
CD_DOOR
PUIN
CCE
BUCK
BUS3
BUS2
BUS1
BUS0
CD_ON
CDR/W
TO CONTROL C.B
CON401
CN2
DM+
DM-
FM+
FM-
SLT
GND
MOTOR
C.B
PIN3
M3
SPINDLE
MOTOR
M2
SLED
MOTOR
S1
INSIDE
LIMIT
WH2
CD DOOR SW

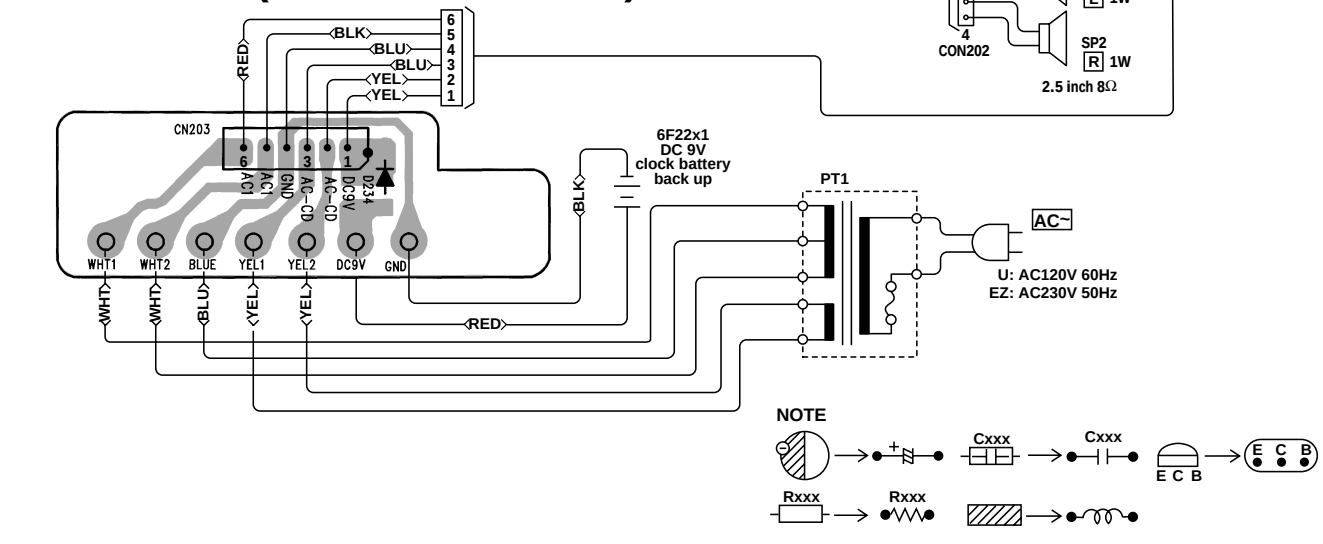
15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

A B C D E F G H I J K L M N O P Q R S T U

MAIN C.B (INSERTED PARTS)



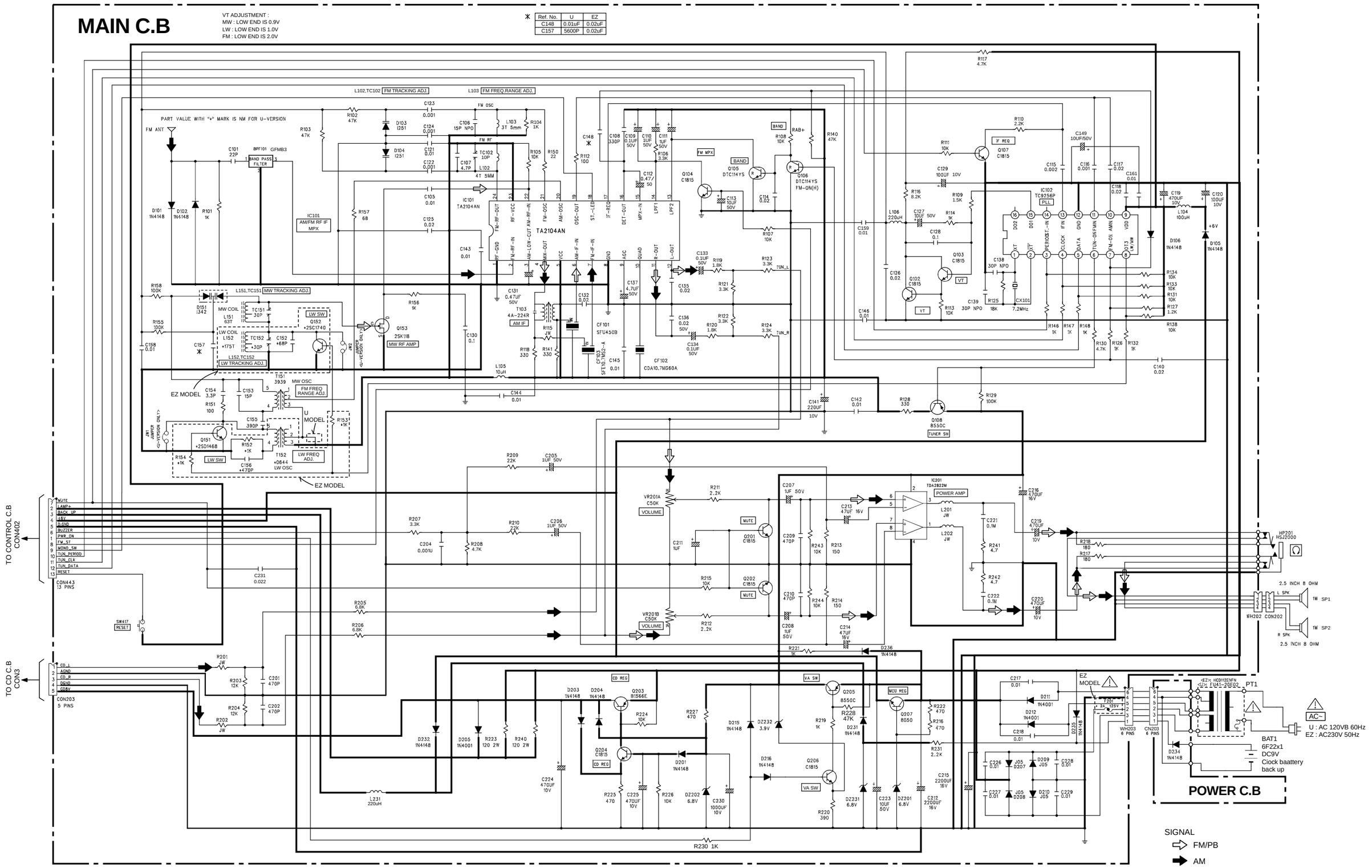
POWER C.B (INSERTED PARTS)



MAIN C.B

VT ADJUSTMENT :
MW : LOW END IS 0.9V
LW : LOW END IS 1.0V
FM : LOW END IS 2.0V

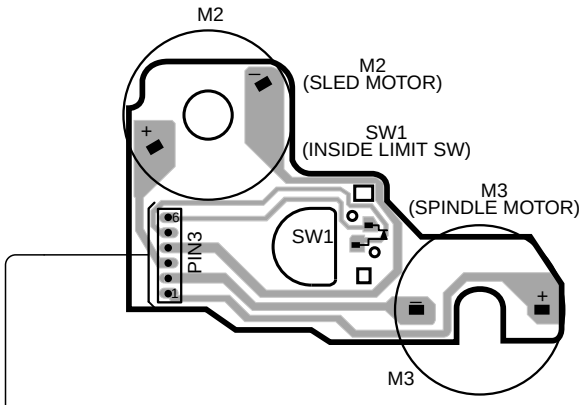
*	Ref. No.	U	EZ
	C148	0.01uF	0.02uF
	C157	5600P	0.02uF



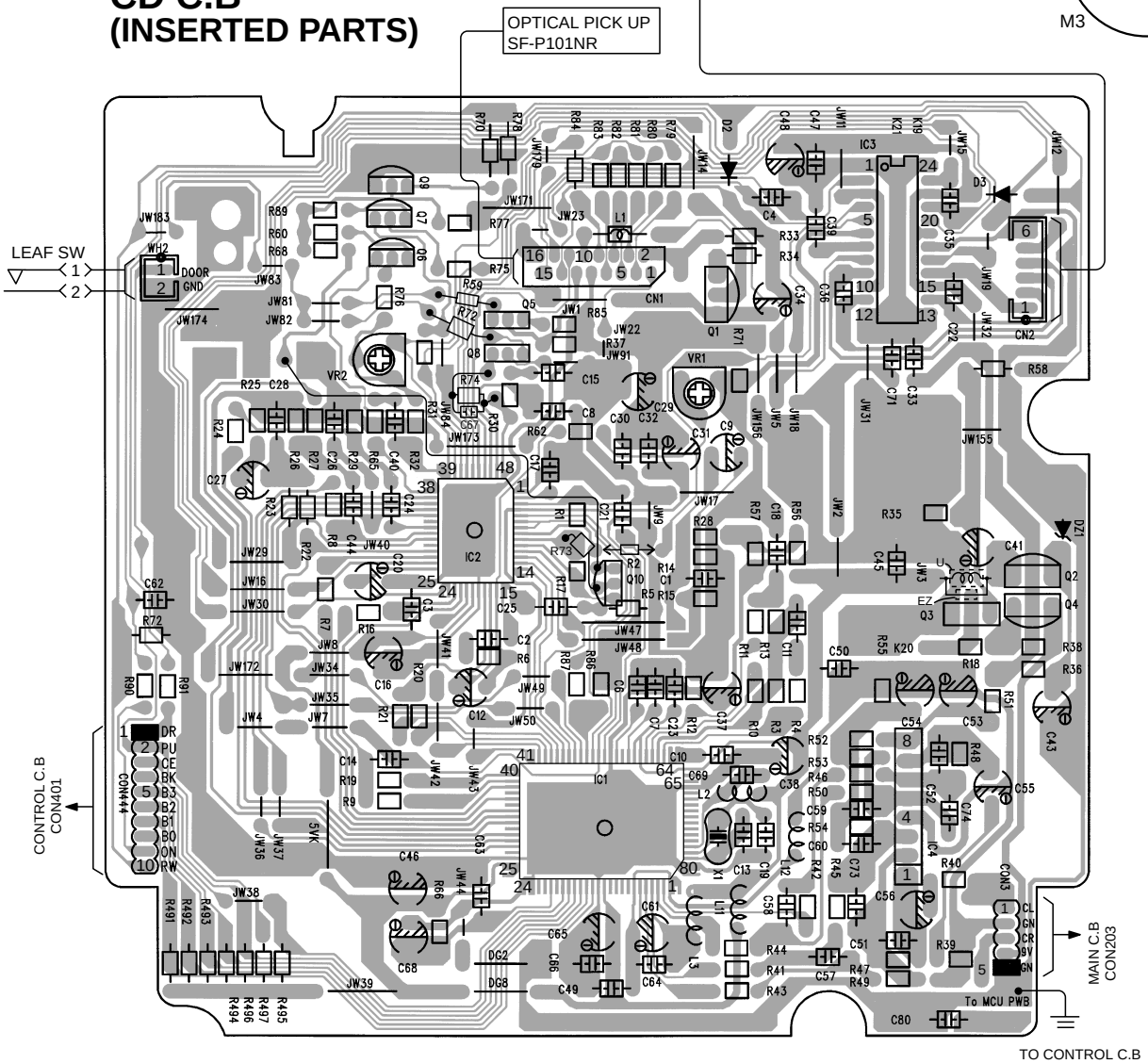
15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

A B C D E F G H I J K L M N O P Q R S T U

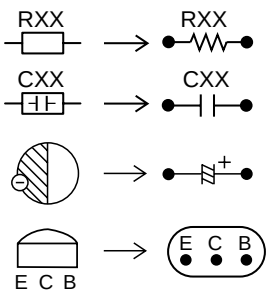
MOTOR C.B
(CONDUCTOR SIDE)



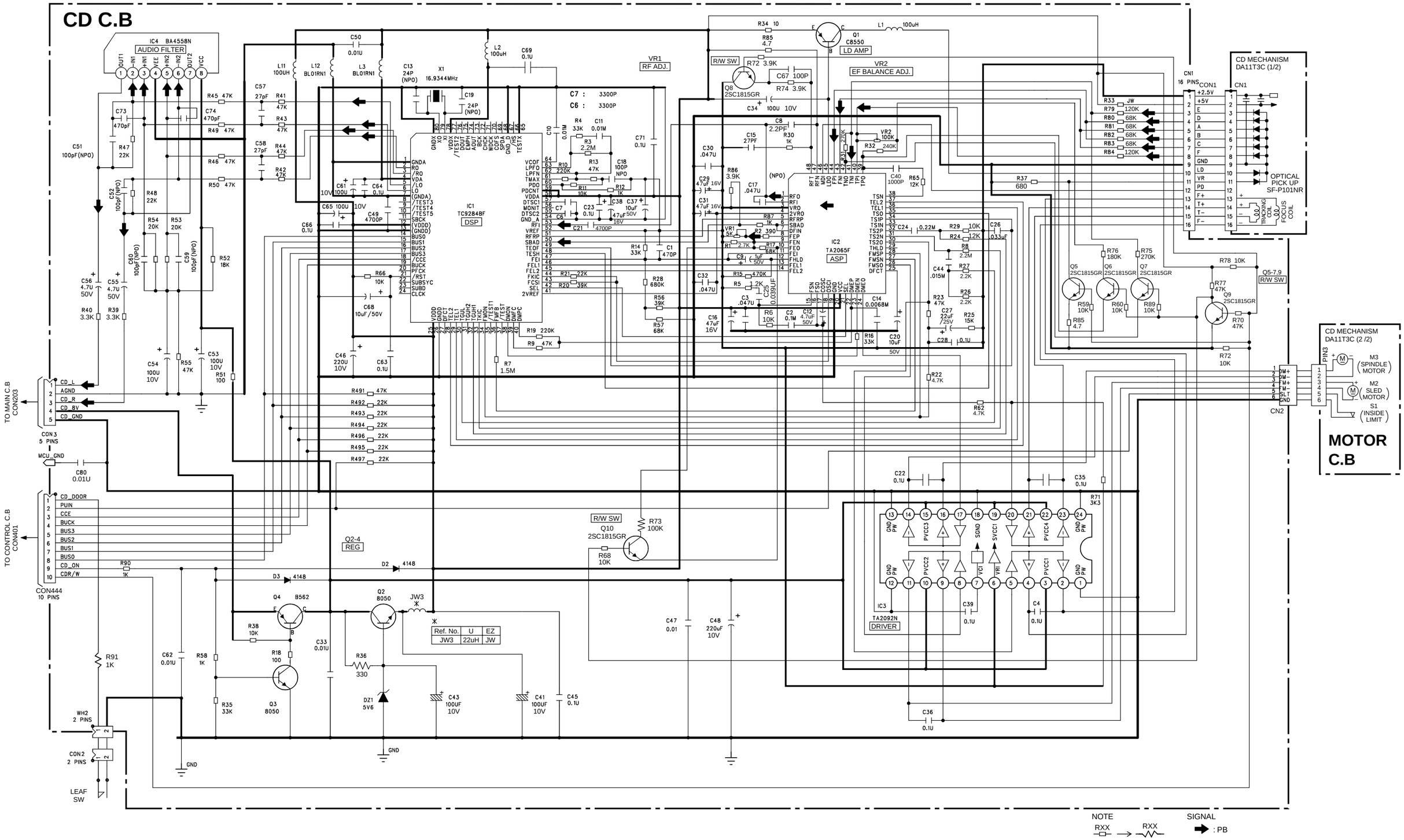
CD C.B
(INSERTED PARTS)



Note



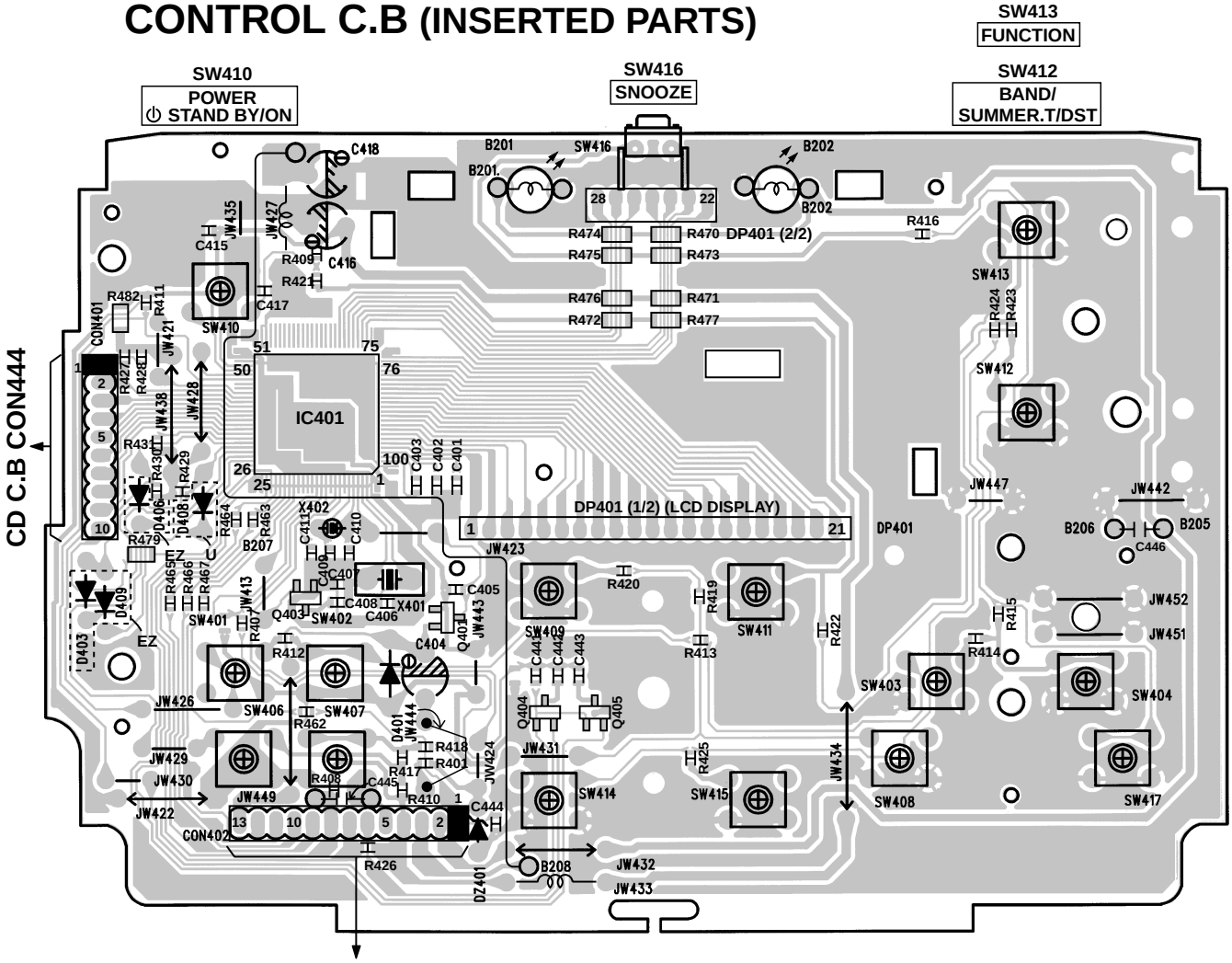
SCHEMATIC DIAGRAM- 2/3 (CD, MOTOR)



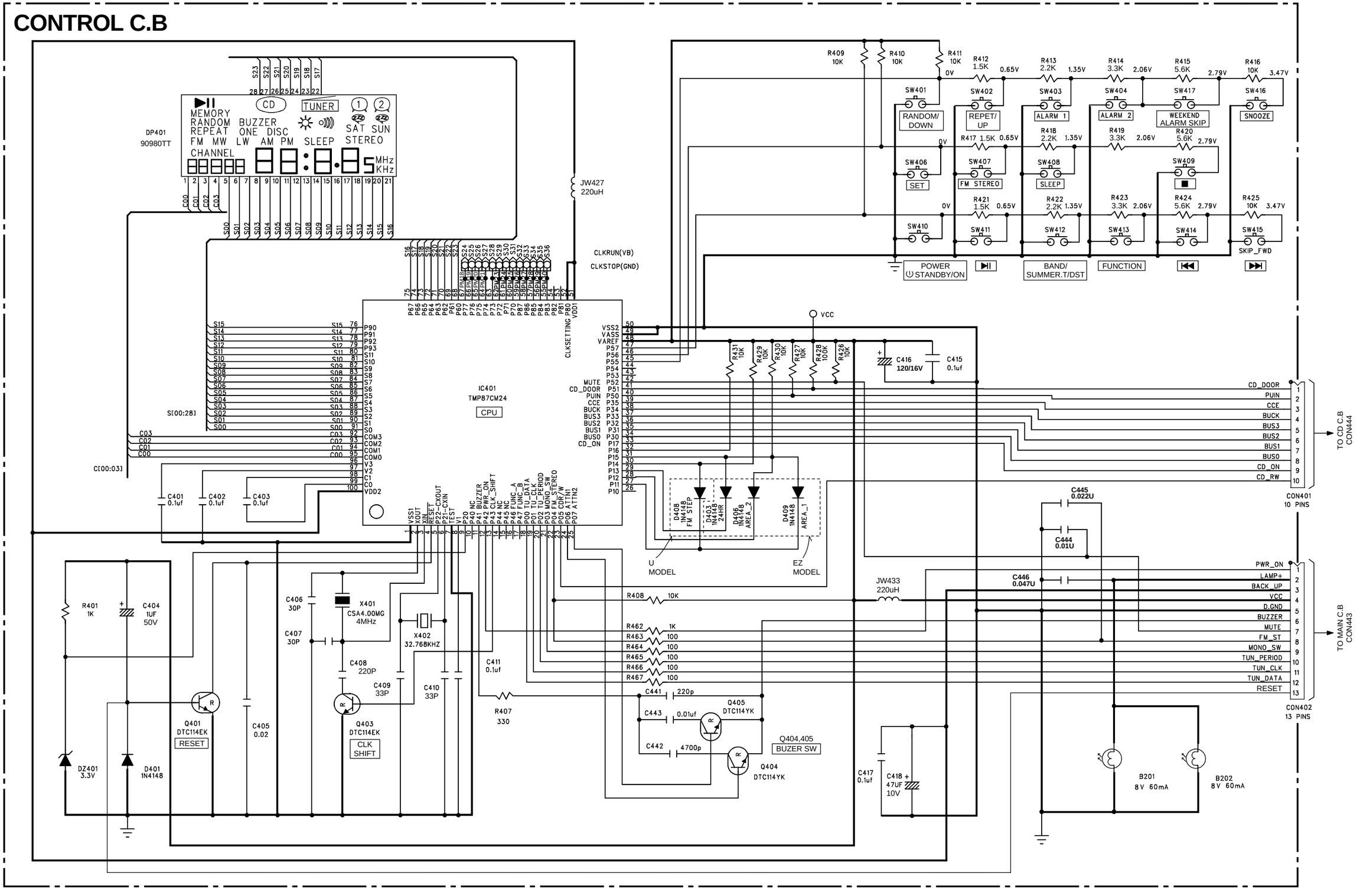
15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

A B C D E F G H I J K L M N O P Q R S T U

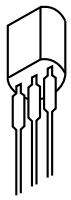
CONTROL C.B (INSERTED PARTS)



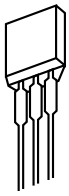
CONTROL C.B


DP401
90980TT
MEMORY
RANDOM
REPEAT
FM MW LW AM PM
CHANNEL
CD
TUNER
BUZZER
ONE DISC
SLEEP
SAT SUN
STEREO
MHz
KHz
JW427
220uH
CLKRUN(VB)
CLKSTOP(GND)
IC401
TMP87CM24
CPU
S[00:28]
C[00:03]
VCC
R409 10K
R410 10K
R411 10K
R412 1.5K
R413 2.2K
R414 3.3K
R415 5.6K
R416 10K
SW401
RANDOM/ DOWN
SW402
REPET/ UP
SW403
ALARM 1
SW404
ALARM 2
SW417
WEEKEND ALARM SKIP
SW416
SNOOZE
SW406
SET
SW407
FM STEREO
SW408
SLEEP
SW409
SW410
SW411
SW412
SW413
SW414
SW415
SKIP_FWD
POWER ⏻ STANDBY/ON
BAND/ SUMMER.T/DST
FUNCTION
R417 1.5K
R418 2.2K
R419 3.3K
R420 5.6K
R421 1.5K
R422 2.2K
R423 3.3K
R424 5.6K
R425 10K
0.65V
1.35V
2.06V
2.79V
3.47V
0V
R431 10K
R429 10K
R430 10K
R427 10K
R428 100K
R426 10K
C416 120/16V
C415 0.1uf
C401 0.1uf
C402 0.1uf
C403 0.1uf
D408 1N4148 FM STEP
D403 1N4148 24HR
D406 1N4148 AREA_2
D409 1N4148 AREA_1
U MODEL
EZ MODEL
C445 0.022U
C444 0.01U
C446 0.047U
JW433
220uH
R408 10K
R462 1K
R463 100
R464 100
R465 100
R466 100
R467 100
R401 1K
C404 1UF 50V
C406 30P
C407 30P
X401
CSA4.00MG
4MHz
X402
32.768KHZ
C408 220P
C409 33P
C410 33P
C411 0.1uf
R407 330
C441 220p
C443 0.01uf
C442 4700p
Q405 DTC114YK
Q404 DTC114YK
Q404,405 BUZER SW
Q401 DTC114EK
RESET
Q403 DTC114EK
CLK SHIFT
C405 0.02
DZ401 3.3V
D401 1N4148
C417 0.1uf
C418 + 47UF 10V
B201 8V 60mA
B202 8V 60mA
CD_DOOR
PUIN
CCE
BUCK
BUS3
BUS2
BUS1
BUS0
CD_ON
CD_RW
TO CD C.B CON444
CON401 10 PINS
PWR_ON
LAMP+
BACK_UP
VCC
D.GND
BUZZER
MUTE
FM_ST
MONO_SW
TUN_PERIOD
TUN_CLK
TUN_DATA
RESET
TO MAIN C.B CON443
CON402 13 PINS

TRANSISTOR ILLUSTRATION-1/1

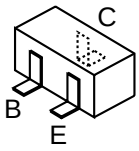


2SC1815
2SD1468

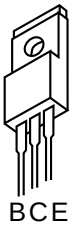


2SC1740
DTC114YS

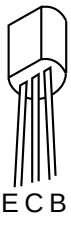
2SB562B



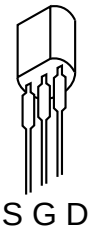
DTC114ESA
DTC114YSA



2SB1566



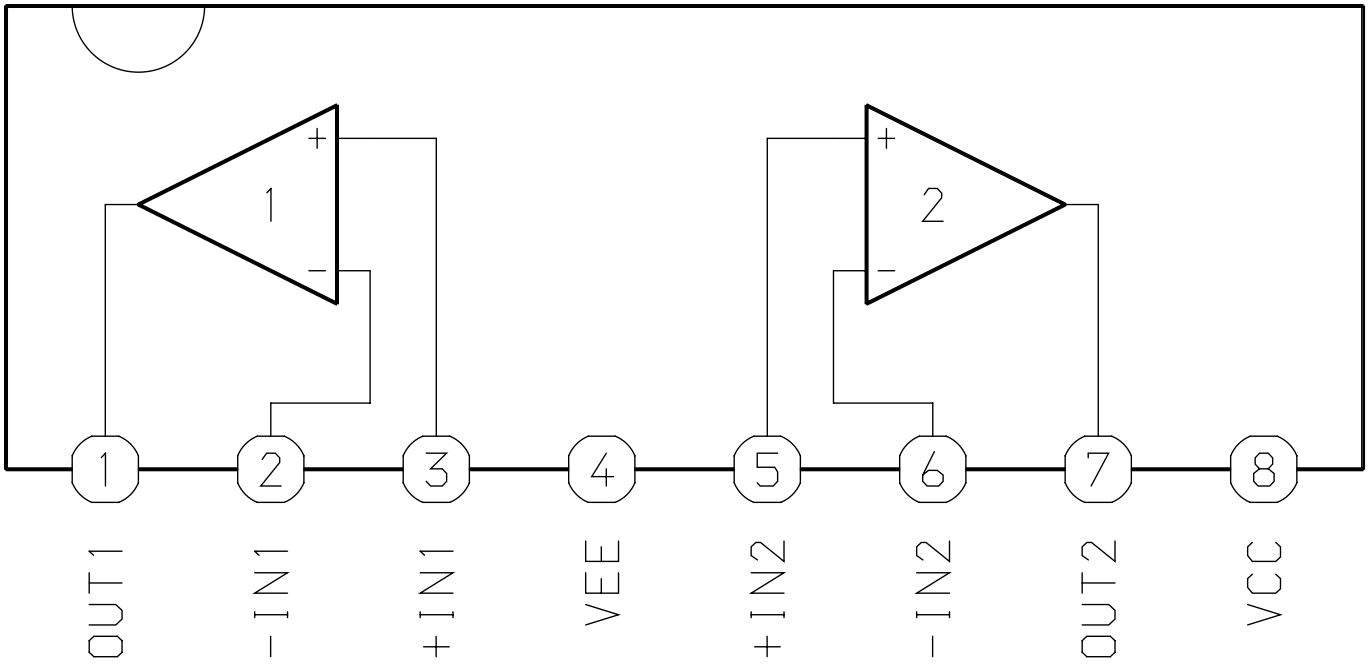
3CA8550
3DA8050



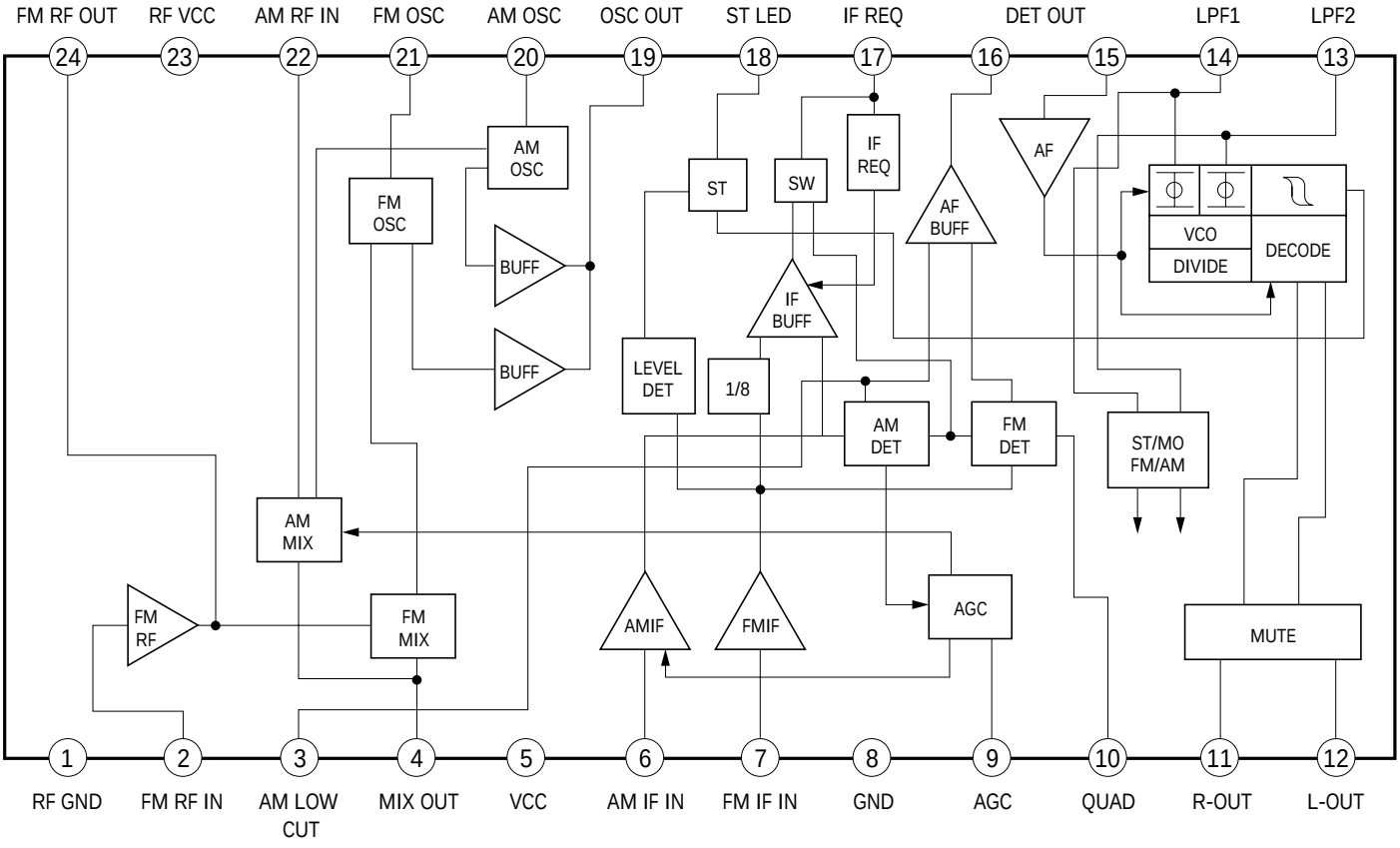
2SK118

IC BLOCK DIAGRAM-1/1

IC, BA4558N

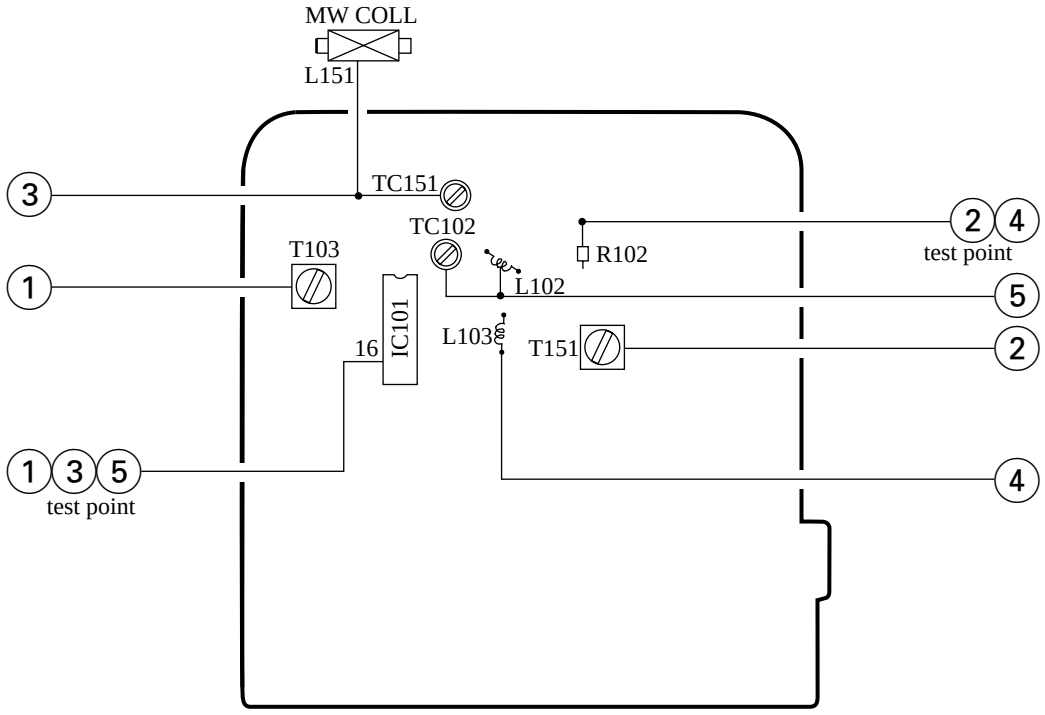


IC, TA2104AN



< TUNER SECTION : U MODEL >

MAIN C.B



1. AM IF Adjustment
   Test point: IC101 (TA2104AN) 16PIN
   Adjustment location: T103
   T103 ...…….....… 450kHz

2. MW Frequency Range Adjustment
   Test point: R102
   Adjustment location: T151
   Set tuner frequency to be 530kHz
   Adjust T151 so that voltage of test point is 0.9V

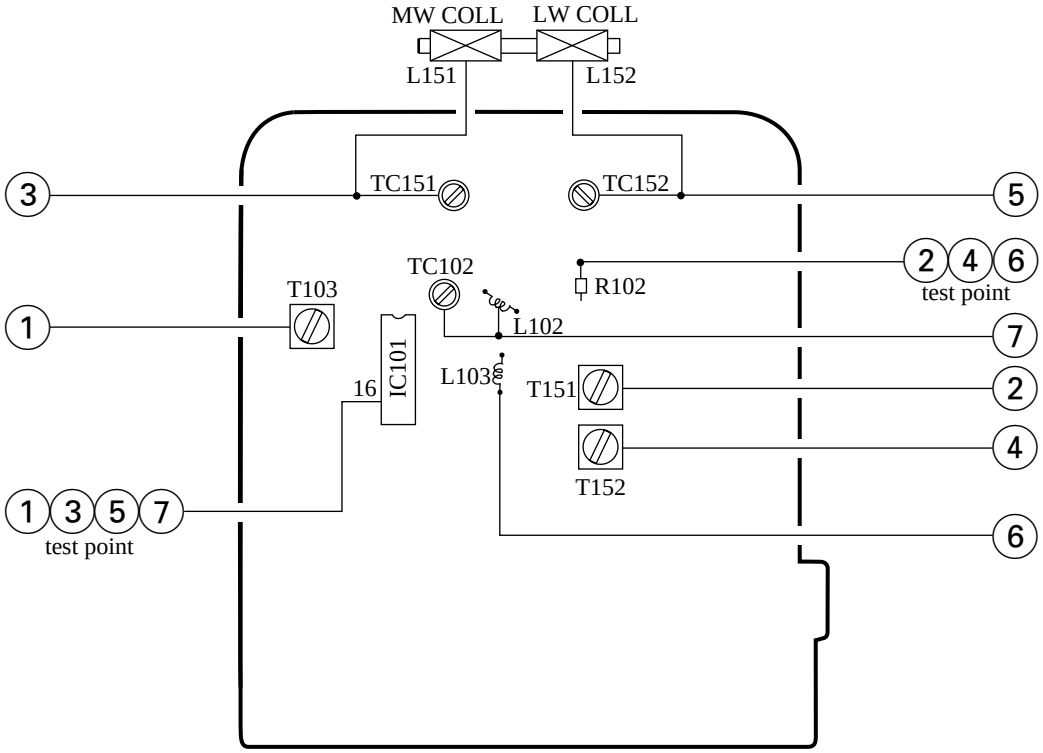
3. MW Tracking Adjustment
   Test point: IC101 (TA2104AN) 16PIN
   Adjustment location: L151, TC151
   L151 .....…… 600kHz waveform max.
   TC151 ...……...…… 1404kHz waveform max.

4. FM Frequency Range Adjustment
   Test point: R102
   Adjustment location: L103
   Set tuner frequency to be 87.5 MHz
   Adjust L103 so that voltage of test point is 2.0 V

5. FM Tracking Adjustment
   Test point: IC101 (TA2104AN) 16PIN
   Adjustment location: L102, TC102
   L102 .....……...… 90.1MHz waveform max.
   TC102 ...……...… 106.1MHz waveform max.

< TUNER SECTION : EZ MODEL >

MAIN C.B



1. AM IF Adjustment
   Test point: IC101 (TA2104AN) 16PIN
   Adjustment location: T103
   T103 .....… 450kHz

2. MW Frequency Range Adjustment
   Test point: R102
   Adjustment location: T151
   Set tuner frequency to be 531kHz
   Adjust T151 so that voltage of test
   point is 0.9V

3. MW Tracking Adjustment
   Test point: IC101 (TA2104AN) 16PIN
   Adjustment location: L151, TC151
   L151 .....…..…..… 603kHz waveform max.
   TC151 ..….....… 1404kHz waveform max.

4. LW Frequency Adjustment
   Test point: R102
   Adjustment location: T152
   Set tuner frequency to be 144kHz
   Adjust T152 so that voltage of test
   point is 0.9 V

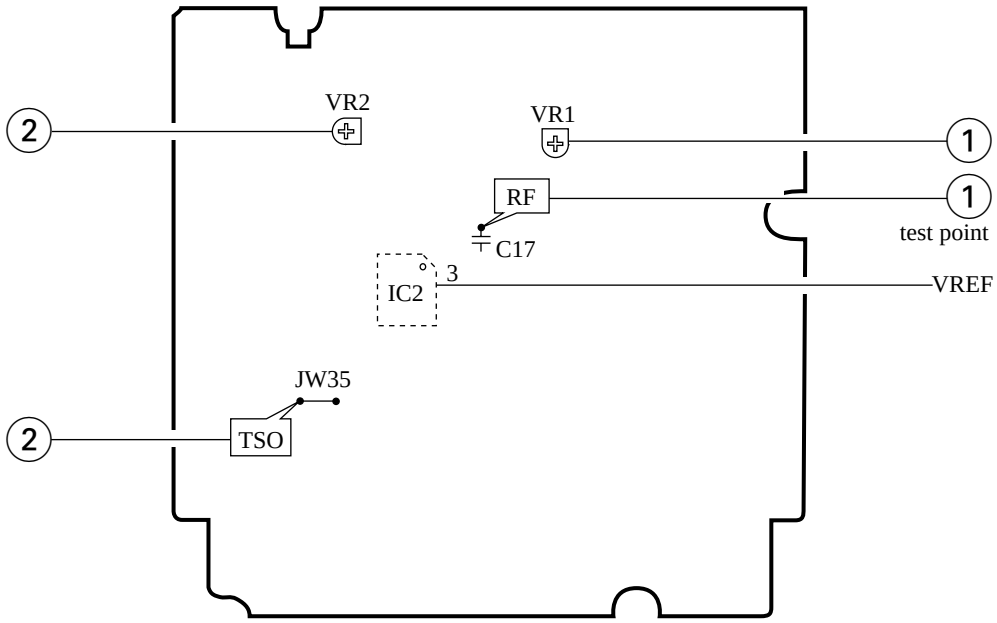
5. LW Tracking Adjustment
   Test point: IC101 (TA2104AN) 16PIN
   Adjustment location: L152, TC152
   L152 .....….. 144kHz
   TC152 .....… 281kHz

6. FM Frequency Range Adjustment
   Test point: R102
   Adjustment location: L103
   Set tuner frequency to be 87.5MHz
   Adjust L103 so that voltage of test
   point is 2.0 V

7. FM Tracking Adjustment
   Test point: IC101 (TA2104AN) 16PIN
   Adjustment location: L102, TC102
   L102 .....…..…..… 90.1MHz waveform max.
   TC102 .....…..……. 106.1MHz waveform max.

< CD SECTION >

CD C.B



1. RF Adjustment
   Test point: RF (IC2 1PIN) and VREF (IC2 3PIN)
   1) Connect the oscilloscope to the test points.
   2) Turn on power switch.
   3) Load test disc (TDC-782) and play the second track.
   4) Adjust VR1 so that RF waveform is maximum.
   5) Turn off power switch.

2. EF Balance Adjustment
   Test point: TSO (IC2 35PIN) and VREF (IC2 3PIN)
   1) Connect an oscilloscope to the test points.
   2) Turn on power switch.
   3) Load test disc (TCD-782) and play.
   4) Press skip button so that EF waveform appears.
   5) Adjust VR2 so that EF waveform is symmetrical.
   6) Turn off power switch.

THE MEASURED VALUE IS DC VOLTAGE
UNIT: V
TUNER SECTION
TEST CONDITION:SET AM/FM TUNER ON ONE FREQUENCY

IC101 (TA2104AN)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10	11	12
AM	0	0	1.15	5.68	5.73	5.05	5.73	0	0.45	5.15	1.26	1.25
FM	0	0.78	0.15	4.33	4.57	4.03	4.60	0	0.49	3.81	1.23	1.20
PIN'S NUMBER	13	14	15	16	17	18	19	20	21	22	23	24
AM	0	0	0.70	1.17	0.97	5.99	5.56	5.72	5.73	5.70	5.73	5.73
FM	3.93	3.89	0.70	1.34	0.71	0.10	4.42	4.56	4.92	4.55	4.56	4.85

IC102 (TC9256P)

PIN'S UNMBER	1	2	3	4	5	6	7	8
AM	2.73	2.76	5.49	5.48	5.50	0.11	0.26	0
FM	2.72	2.75	5.49	5.49	5.48	0.09	5.00	0
PIN'S UNMBER	9	10	11	12	13	14	15	16
AM	5.50	2.78	0	0	2.73	0	1.20	4.38
FM	5.48	0	2.72	0	2.72	0	1.18	2.33

TRANSISTOR	Q102 (C1815)			Q103 (C1815)			Q104 (C1815)		
	E	C	B	E	C	B	E	C	B
AM	0	0.92	0.61	0.62	0.92	11.9	0	0	0.67
FM	0	4.55	0.61	0.61	4.55	1.18	0	3.87	0.02
TRANSISTOR	Q105 (DTC114YS)			Q106 (DTC114YS)					
	E	C	B	E	C	B			
AM	0	0	3.12	0	3.11	0.25			
FM	0	3.93	0	0	0	4.58			

POWER & AMP.
TEST CONDITION:CD PLAY

IC201 (TDA2822M)

PIN'S NUMBER	1	2	3	4	5	6	7	8
CD PLAY	3.93	8.84	3.96	0	0.53	0	0	0.53

TRANSISTOR	Q203 (B1566E)			Q204 (C1815)			Q206 (C1815)		
	E	C	B	E	C	B	E	C	B
CD	8.48	6.40	7.85	5.70	7.85	6.32	4.66	8.95	5.17
TRANSISTOR	Q205 (8550C)			Q207 (8050)					
	E	C	B	E	C	B			
CD	9.78	8.84	9.13	6.87	9.85	6.21			

CD SECTION
TEST CONDITION: CD PLAY

IC2 (TA2065F)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10	11	12
	1.88	2.07	2.07	1.92	2.19	2.00	2.00	2.06	2.06	1.87	1.86	1.83
PIN'S NUMBER	13	14	15	16	17	18	19	20	21	22	23	24
	1.82	2.07	2.07	2.09	2.18	2.45	0	4.89	2.02	2.11	2.11	2.21
PIN'S NUMBER	25	26	27	28	29	30	31	32	33	34	35	36
	1.83	2.05	2.06	2.07	1.84	2.07	2.05	2.06	2.07	2.07	2.07	2.07
PIN'S NUMBER	37	38	39	40	41	42	43	44	45	46	47	48
	0.14	2.07	1.89	2.05	2.03	1.91	2.07	2.06	3.84	0.18	2.07	1.91

IC3 (TA2092N)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10	11	12
	0	3.99	8.67	4.12	2.09	2.07	4.05	2.05	3.95	8.67	4.19	0
PIN'S NUMBER	13	14	15	16	17	18	19	20	21	22	23	24
	0	3.60	8.65	4.48	2.22	0	8.65	2.07	4.04	8.66	4.06	0

IC1 (TC9284BF)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10	11	12
	0	2.95	2.81	4.89	2.80	2.56	0	4.86	4.86	4.87	4.89	4.89
PIN'S NUMBER	13	14	15	16	17	18	19	20	21	22	23	24
	0	4.37	4.28	4.28	4.29	4.22	4.6	2.27	4.88	0.08	0	0
PIN'S NUMBER	25	26	27	28	29	30	31	32	33	34	35	36
	4.89	0	0	2.07	2.07	0	0.28	2.08	1.69	2.07	4.86	1.79
PIN'S NUMBER	37	38	39	40	41	42	43	44	45	46	47	48
	4.86	2.07	2.07	2.29	4.14	4.86	2.43	2.44	2.07	2.06	2.06	0.31
PIN'S NUMBER	49	50	51	52	53	54	55	56	57	58	59	60
	2.07	2.00	2.19	2.07	0.35	0	0.38	4.89	2.36	4.89	4.89	2.08
PIN'S NUMBER	61	62	63	64	65	66	67	68	69	70	71	72
	1.98	2.07	1.95	1.31	0	4.87	0	0	1.22	1.62	2.43	2.43
PIN'S NUMBER	73	74	75	76	77	78	79	80				
	2.52	0	2.42	4.85	4.89	2.16	1.91	2.21				

IC4 (BA4558N)

PIN'S NUMBER	1	2	3	4	5	6	7	8
CD PLAY	5.57	5.20	4.99	0	5.00	5.20	5.82	8.45

TRANSISTOR	Q2 (8050)			Q3 (8050)			Q4 (B562)		
	E	C	B	E	C	B	E	C	B
CD	4.48	6.26	5.58	0	0.08	0.74	6.35	6.26	5.51

CPU SECTION

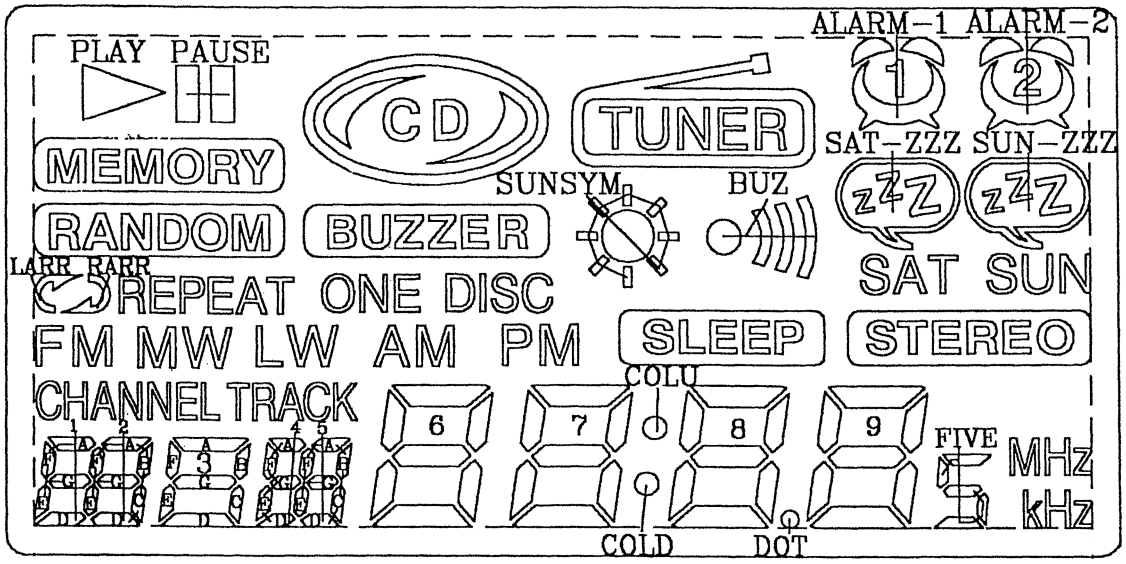
TEST CONDITION: CD PLAY OR BUZZER ON

IC401 (TMP87CM24AF)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10	11	12
CD	0	2.26	1.95	5.30	3.05	2.36	0	0.95	3.18	0.16	0	5.39
BUZZER ON	0	2.29	1.99	5.37	3.10	2.23	0	0.95	3.18	0.96	2.40	5.40
PIN'S NUMBER	13	14	15	16	17	18	19	20	21	22	23	24
CD	0	0	0	5.40	5.40	5.60	5.40	5.40	0.02	5.91	0.03	0.01
BUZZER ON	0	0	0	5.45	5.45	5.63	5.47	5.46	0	5.90	0.03	5.45
PIN'S NUMBER	25	26	27	28	29	30	31	32	33	34	35	36
CD	0.15	0.01	5.41	5.41	5.41	5.83	5.91	5.91	5.20	4.30	4.40	4.30
BUZZER ON	5.45	0.01	5.47	5.47	5.45	5.87	5.95	5.95	0.01	0.01	0.01	0.01
PIN'S NUMBER	37	38	39	40	41	42	43	44	45	46	47	48
CD	4.36	4.60	4.19	5.72	0.07	0.06	0.03	0.03	5.89	5.89	5.89	6.20
BUZZER ON	0.01	0.01	0.01	0.02	0.04	0.04	0	0	5.94	5.94	5.94	6.20
PIN'S NUMBER	49	50	51	52	53	54	55	56	57	58	59	60
CD	0	0	5.43	5.43	2.39	0	1.40	1.40	1.40	1.40	1.40	1.40
BUZZER ON	0	0	5.48	5.48	1.39	0	1.40	1.40	1.40	1.40	1.40	1.40
PIN'S NUMBER	61	62	63	64	65	66	67	68	69	70	71	72
CD	1.40	1.40	/	/	/	/	/	/	/	/	/	/
BUZZER ON	1.40	1.40	/	/	/	/	/	/	/	/	/	/
PIN'S NUMBER	73	74	75	76	77	78	79	80	81	82	83	84
CD	/	/	/	/	/	/	/	/	/	/	/	/
BUZZER ON	/	/	/	/	/	/	/	/	/	/	/	/
PIN'S NUMBER	85	86	87	88	89	90	91	92	93	94	95	96
CD	/	/	/	/	/	/	/	/	/	/	/	2.76
BUZZER ON	/	/	/	/	/	/	/	/	/	/	/	2.76
PIN'S NUMBER	97	98	99	100								
CD	1.86	1.63	0.70	0								
BUZZER ON	1.86	1.65	0.70	0								

FL (90980TT) GRID ASSIGNMENT/ANODE CONNECTION-1/1

GRID ASSIGNMENT



ANODE CONNECTION

PIN#	1	2	3	4	5	6	7	8	9	10	11	12	13	14
COM0	COM0				1A	2A	2B	CHANNEL	3A	4A	5A	5B	TRACK	6A
COM1		COM1			1F	2F	2G	3F	3B	4F	5F	5G	6F	6B
COM2			COM2		1G	2E	2C	3G	3C	4G	5E	5C	6G	6C
COM3				COM3	1E	1D	2D	3E	3D	4E	5D	5D	6E	6D
PIN#	15	16	17	18	19	20	21	22	23	24	25	26	27	28
COM0	7F	7A	COLU	8A	9A	9B	STEREO	SUN	SAT	SLEEP	PM	LW	MW	FM
COM1	7G	7B	8F	8B	9F	9G	FIVE	SUN-ZZZ	SAT-ZZZ	SUNSYM	AM	REPEAT	RARR	LARR
COM2	7E	7C	8G	8C	9E	9C	MHz	ALARM-2	ALARM-1	BUZ	DISC	ONE	RANDOM	MEMORY
COM3	7D	COLD	8E	8D	DOT	9D	KHz			TUNER	CD	BUZZER	PAUSE	PLAY

IC DESCRIPTION-1/4 (TC9256P)-1/1

Pin No.	Pin Name	I/O	Description
1	XT	I	Crystal ocsillator pins. Connect 7.2MHz crystal oscillator to supply reference frequency and internal clock.
2	$\overline{XT}$	O	Crystal ocsillator pins. Connect 7.2MHz crystal oscillator to supply reference frequency and internal clock.
3	PERIOD	I	Period signal input.
4	CLOCK	I	Clock signal input.
5	DATA	I/O	Serial data input / output
6	TUN-ON	O	Tuner-on Switch.
7	FM-ON	O	FM-on Switch.
8	LW/MW	O	High : MW Low : LW
9	VDD	—	Power supply pins.
10	AMIN	I	These pins input FM and AM band local oscillator signals by capacitor coupling.
11	FMIN	I	These pins input FM and AM band local oscillator signals by capacitor coupling.
12	GND	—	Ground.
13	IFIN	I	Counter frequency measurement input.
14	ST. -IN	I	Counter frequency measurement input.
15	DO1	O	These pins are for phase comparator tristate output.
16	DO2	O	These pins are for phase comparator tristate output.

Pin No.	Pin Name	I/O	Description
1	GNDA	—	D/A converter R-channel analog GND.
2	RO	O	R-channel data positive output.
3	$\overline{\text{RO}}$	O	R-channel data inverted output.
4	VDA	—	D/A converter power supply.
5	$\overline{\text{LO}}$	O	L-channel data inverted output.
6	LO	O	L-channel data positive output.
7	GNDA	—	D/A converter L-channel analog GND.
8-10	$\overline{\text{TEST3}}$-$\overline{\text{TEST5}}$	I	TEST pin. Normally "H" or open.
11	SBOK	O	Sub code Q data CRCC judgment result output. Judgment result OK: H
12	VDDD	—	Digital power supply. (+5 V)
13	GNDD	—	Digital GND.
14-17	BUS0-BUS3	I/O	µprocessor interface, data input/output.
18	CCE	I	µprocessor interface, chip enable signal input. When "L" : BUS 3-0 are active
19	BUCK	I	µprocessor interface, clock input.
20	PFCK	O	PB frame sync output. (Not connected)
21	$\overline{\text{RST}}$	I	Reset signal input. "L" at reset.
22	SUBSYC	O	Sub code block sync output. When sub code is detected,"H" at S1 position. (Not connected)
23	SUBD	O	Sub code P-W output. (Not connected)
24	CLCK	I	Sub code P-W data read clock input. (Not connected)
25	VDDD	—	Digital power supply. (+5 V)
26	GNDD	—	Digital GND.
27	DFCT	O	Defect detection signal output. When defect is detected: "VREF", normally "HiZ".
28	TEL2	O	Tracking gain adjustment analog switch output. "VREF" , or "HiZ".
29	TEL1	O	Tracking gain adjustment analog switch output. "VREF" , or "HiZ".
30	TGUL	O	Analog switch output for tracking servo gain up. Polarity in gain-up mode and normal mode can be selected by command.
31	TGUH2	O	Analog switch output for tracking servo gain up. "HiZ" for gain-up, normally "VREF".
32	TUGH1	O	TGUH1 during normal playback. TGUH2: not used
33	TKIC	O	Tracking actuator kick signal output. NKICx and CKICx are used for kick during tracking gain adjustment. "VREF" for outermost track."O" for moving toward inner track. Normally "HiZ".
34	FMON	O	Analog switch output to turn ON/OFF the feed servo. "HiZ" to turn ON servo. "VREF" to turn OFF servo.
35	$\overline{\text{TEST1}}$	I	TEST pin. Normally "H" or open.
36	FMFB	O	Feed motor FWD/BWD direction control signal output."2VREF" for outmost track. "O" for moving toward inner track. Normally "HiZ".
37	$\overline{\text{TEST}}$	I	TEST pin. Normally "H" or open.
38	DMON	O	Analog switch output to select gain of the disc motor drive circuit. "HiZ" for CLV servo OFF, "HiZ" or "VREF" can be selected by command.

<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Description</th></tr>
<tr><td>39</td><td>DMFC</td><td>O</td><td>Disc motor CLV servo AFC signal output.
<table>
<tr><th>Operation</th><th>Command</th><th>DMFC output</th></tr>
<tr><td>Motor acceleration</td><td>DMFK</td><td>“2VREF”</td></tr>
<tr><td>CLV servo ON</td><td>DMSV</td><td>AFC signal (PWM)</td></tr>
<tr><td>Motor brake</td><td>DMBK</td><td>“L”</td></tr>
<tr><td>CLV servo OFF</td><td>DMOFF</td><td>“VREF”</td></tr>
</table></td></tr>
<tr><td>40</td><td>DMPC</td><td>O</td><td>Disc motor CLV servo APC signal output.</td></tr>
<tr><td>41</td><td>2VREF</td><td>—</td><td>Analog power supply. (twice the “VREF” voltage)</td></tr>
<tr><td>42</td><td>SEL</td><td>O</td><td>Servo mode select output. It turns ON/OFF the laser diode (LD) and focus servo.
<table>
<tr><th>SEL output</th><th>LD</th><th>Focus servo</th><th>Operating mode</th></tr>
<tr><td>“L”</td><td>OFF</td><td>OFF</td><td>LD OFF</td></tr>
<tr><td>“HiZ”</td><td>ON</td><td>OFF</td><td>Focus search</td></tr>
<tr><td>“H”</td><td>ON</td><td>ON</td><td>Focus ON (normal play)</td></tr>
</table></td></tr>
<tr><td>43</td><td>FCSI</td><td>O</td><td>Focus actuator drive signal output during focus search mode. “VDDA” to move the lens far from disc. “L” to move the lens closer to disc. Normally “HiZ”.</td></tr>
<tr><td>44</td><td>FKIC</td><td>O</td><td>Focus actuator drive signal output during focus adjustment mode. “VDDA” to move the lens far from disc. “L” to move the lens closer to disc. Normally “HiZ”.</td></tr>
<tr><td>45, 46</td><td>FEL1, FEL2</td><td>O</td><td>Focus gain adjustment analog switch output. “VREF” or “HiZ”.</td></tr>
<tr><td>47</td><td>FEI</td><td>I</td><td>Focus error signal input.</td></tr>
<tr><td>48</td><td>TESH</td><td>I</td><td>Analog switch input to track error signal sample-and-hold.</td></tr>
<tr><td>49</td><td>TEOF</td><td>O</td><td>Focus gain adjustment analog switch output.“VREF” when tracking servo off.</td></tr>
<tr><td>50</td><td>SBAD</td><td>I</td><td>Sub beam added signal input.</td></tr>
<tr><td>51</td><td>RFRP</td><td>I</td><td>RF ripple signal input.</td></tr>
<tr><td>52</td><td>VREF</td><td>—</td><td>Analog power supply.</td></tr>
<tr><td>53</td><td>RFI</td><td>I</td><td>RF signal input.</td></tr>
<tr><td>54</td><td>GNDA</td><td>—</td><td>Analog GND.</td></tr>
<tr><td>55</td><td>DTSC2</td><td>O</td><td>Data slice control EFM signal inverted output.</td></tr>
<tr><td>56</td><td>MONI T</td><td>O</td><td>Internal signal monitored output. EFMO, PLCK or LOCK signals can be selected by command. Can be muted. (Not used)</td></tr>
<tr><td>57</td><td>DTSC 1</td><td>O</td><td>Date slice control EFM signal positive polarity output.</td></tr>
<tr><td>58</td><td>VDDA</td><td>—</td><td>Analog power supply.</td></tr>
<tr><td>59</td><td>PDCNT</td><td>I</td><td>PDO output control signal input. “L” to fix to “HiZ” forcibly. “H” : normal output.</td></tr>
<tr><td>60</td><td>PDO</td><td>O</td><td>Phase error signal between EFM and PLCK signals is output.</td></tr>
<tr><td>61</td><td>TMAX</td><td>O</td><td>TMAX detected result output.
<table>
<tr><th>TMAX detected result</th><th>TMAX output</th></tr>
<tr><td>Longer than specified cycle</td><td>“L”</td></tr>
<tr><td>Shorter than specified cycle</td><td>“VREF”</td></tr>
<tr><td>Within specified cycle</td><td>“HiZ”</td></tr>
</table></td></tr>
</table>

Pin No.	Pin Name	I/O	Description
62	LPFN	I	Low-pass filter amplifier inverted input.
63	LPFO	O	Low-pass filter amplifier output.
64	VCOF	O	VCO filter output.
65	TESTX	I	TEST pin. Normally “H” or “L” .(Connected to +5 V)
66	$\overline{\text{HS}}$	O	Double speed mode output. “H” : normal speed. “L” : double speed (Not connected)
67	GNDD	—	Digital GND.
68	SPDA	O	Processor status signal output. (Not connected)
69	COFS	O	Correction circuit frame clock (7.35 kHz) output. (Not connected)
70	WDCK	O	Word clock (88.2 kHz) output. SUBQ, BUF0V or 1PF can be selected by the µprocessor command. (Not connected)
71	CHCK	O	Channel clock (44.1 kHz) output. “L”for L-channel. “H” for R-channel. (Not connected)
72	BCK	O	Bit clock (1.4112 MHz) output. (Not connected)
73	AOUT	O	Audio data output. (Not connected)
74	EMPH	O	Emphasis ON/OFF select signal. “H” : emphasis ON. “L” for emphasis OFF (Not connected)
75	DOUT	O	DIGITAL SIGNAL output. (Not connected)
76	$\overline{\text{TEST2}}$	I	TEST pin. Normally “H”. (Not connected)
77	VDDX	—	Crystal oscillator circuit power supply.
78	XI	I	External crystal oscillator is connected. (Crystal oscillator frequency 16.9344 MHz)
79	XO	O	External crystal oscillator is connected. (Crystal oscillator frequency 16.9344 MHz)
80	GNDX	—	Crystal oscillator GND.

IC DESCRIPTION-3/4 (TA2065F)-1/2

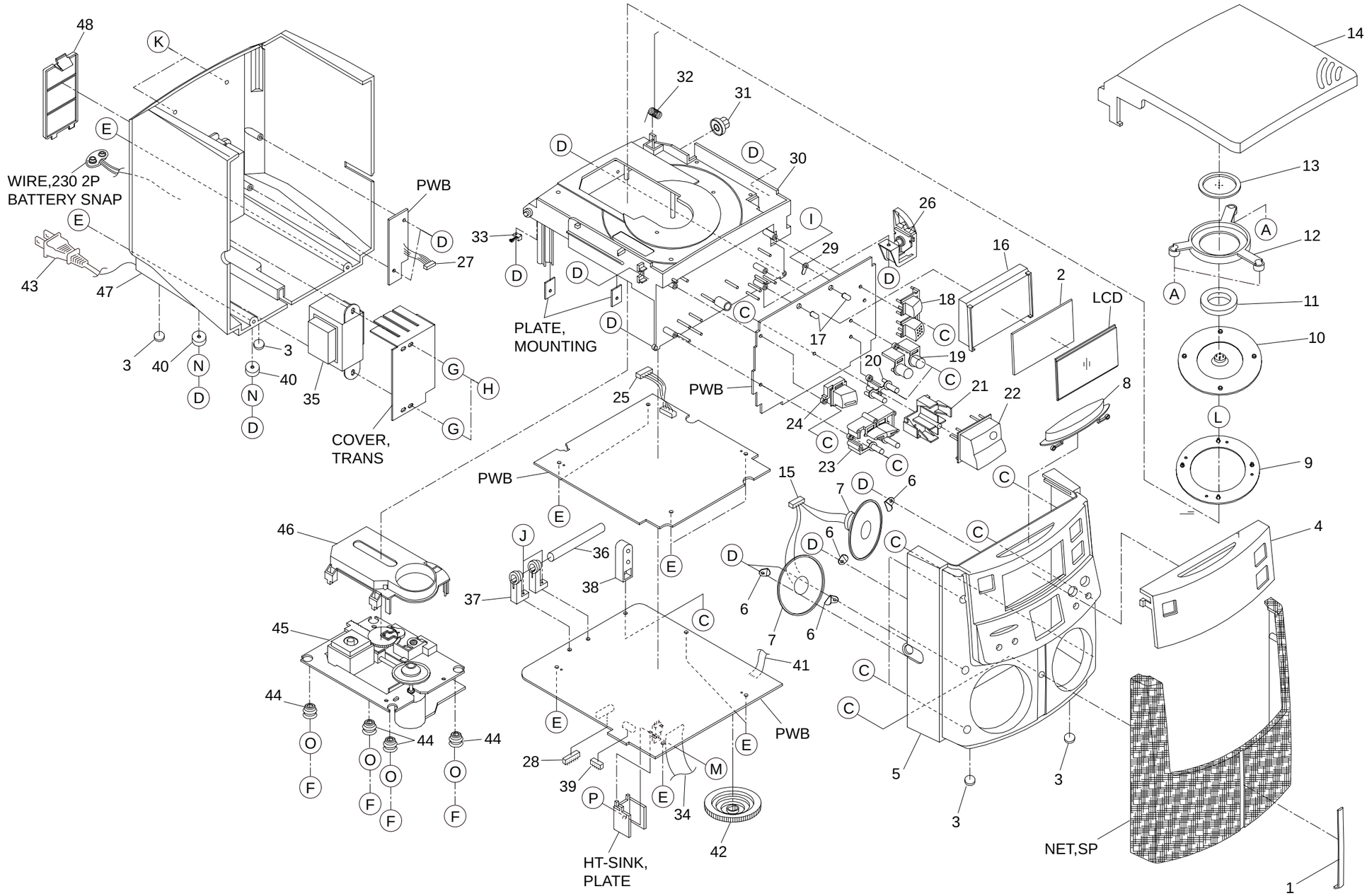
Pin No.	Pin Name	I/O	Description
1	RFO	O	RF amp (RF AMP) output terminal.
2	RFI	I	RF ripple signal generating circuit input terminal.
3	VRO	O	VR amp output terminal.
4	2VRO	O	2VR amp output terminal.
5	RFRP	O	RF ripple signal output terminal.
6	SBAD	O	Defects detection signal output terminal.
7	DFIN	I	Defect detecting comparator positive phase input terminal.
8	FEP	I	Focus error balance adjusting input terminal.
9	FEN	I	Focus error amp (FE AMP) negative phase input terminal.
10	FEO	O	Focus error amp (FE AMP) output terminal.
11	FEI	I	Focus output amp (FS AMP) positive phase input terminal.
12	FHLD	I	Hold switch terminal for defect.
13	FEL1	I	Focus gain adjusting terminal.
14	FEL2	I	Focus gain adjusting terminal.
15	FSN	I	Focus output amp (FS AMP) negative phase input terminal.
16	FSO	O	Focus output amp (FS AMP) output terminal.
17	COSC	O	Focus search signal generating capacitor connecting terminal.
18	OSCI	I	Focus search signal generating built-in current source control input terminal.
19	GND	—	Ground terminal.
20	VCC	—	Power source terminal.
21	SEL	I	Analog switch control signal input terminal.
22	DMEP	I	Disc motor amp (DM AMP) positive phase input terminal.
23	DMEN	I	Disc motor amp (DM AMP) negative phase input terminal.
24	DMEO	O	Disc motor amp (DM AMP) output terminal.
25	DFCT	I	Defect detecting comparator negative phase input terminal.
26	FMSO	O	Feed motor output amp (FMS AMP) output terminal.
27	FMSN	I	Feed motor output amp (FMS AMP) negative phase input terminal.
28	FMSP	I	Feed motor output amp (FMS AMP) positive phase input terminal.
29	THLD	I	Hold switch terminal for defect.
30	TS2O	O	Tracking servo amp 2 (TS2 AMP) output terminal.
31	TS2N	I	Tracking servo amp 2 (TS2 AMP) negative phase input terminal.
32	TS2P	I	Tracking servo amp 2 (TS2 AMP) positive phase input terminal.
33	TS1N	I	Tracking servo amp 1 (TS1 AMP) negative phase input terminal.
34	TS1P	I	Tracking servo amp 1 (TS1 AMP) positive phase input terminal.
35	TSO	O	Tracking output amp (TS AMP) output terminal.
36	TEL1	I	Tracking gain adjusting terminal.
37	TEL2	I	Tracking gain adjusting terminal.
38	TSN	I	Tracking output amp (TS AMP) negative phase input terminal.
39	TPO	O	Sub-beam I-V amp output terminal.
40	TPI	I	Sub-beam I-V amp input terminal.
41	TNI	I	Sub-beam I-V amp input terminal.

Pin No.	Pin Name	I/O	Description
42	TNO	O	Sub-beam I-V amp output terminal.
43	FNI	I	Main-beam I-V amp input terminal.
44	FPI	I	Main-beam I-V amp input terminal.
45	LDO	O	Laser diode amp output terminal.
46	MDI	I	Monitor photo diode amp input terminal.
47	RFN	I	RF amp negative phase input terminal.
48	RFT	I	RF amp peaking terminal.

Pin No.	Pin Name	I/O	Description
1	VSS1	—	Ground
2	XOUT	O	Resonator connecting pins for 4MHz frequency clock.
3	XIN	I	Resonator connecting pins for 4MHz frequency clock.
4	$\overline{\text{RESET}}$	I	Reset signal input
5	CXOUT	O	Resonator connecting pins. (32.768kHz)
6	CXIN	I	Resonator connecting pins. (32.768kHz)
7	TEST	I	Test pin for out-going test.Be fixed to low.
8	V1	O	LCD voltage booster pin. Capacitors are required between V1 pin and Ground.
9	P20	I	STOP mode release signal input.
10	P40	I	Timer / Counter input. (Not connected.)
11	BUZZER	O	BUZZER signal output.
12	PWR_ON	O	PWE_ON signal output.
13	CLK-SHIFT	I	CLK-SHIFT serial data input.
14	P44	O	SIO1 serial output. (Not connected.)
15	P45	I/O	SIO2 serial clock input/ output. (Not connected.)
16	FUNC_A	I	FUNC_A signal input. (Not connected.)
17	FUNC_B	O	FUNC_B signal output. (Not connected.)
18	TU_DATA	I/O	TU_DATA signal input/output.
19	TU_CLK	O	TU_CLK signal output.
20	TU_PERIOD	O	TU_PERIOD signal output.
21	MONO_SW	IN	MONO_SW signal input.
22	FM_STEREO	O	FM-STEREO signal output.
23	CDR/W	O	CDR/W signal output.
24	ATTN1	O	ATTN1 signal output.
25	ATTN2	O	ATTN2 signal output.
26	P10	I	External interruput input 0. (Not connected.)
27	P11	I	FM STEP signal input.
28	P12	I	AREA2 signal input
29	P13	O	24HR signal output.
30	P14	O	FM STEP signal output.
31	P15	I	“AREA_1,24HR signals input”
32	P16	I/O	Programmable input/output port.
33	CD_ON	O	CD-ON signal output.
34-37	BUS0-BUS3	I/O	BUS0-BUS3 signal inputs/outputs.
38	BUCK	O	Clock signal input.
39	CCE	O	Chip enable signal output.
40	PUIN	I	PUIN signal input.
41	CD_DOOR	I	CD-DOOR signal input.
42	MUTE	O	MUTE signal output.
43	P53	I	A/D converter analog input. (Not connected.)
44	P54	I	A/D converter analog input. (Not connected.)

Pin No.	Pin Name	I/O	Description
45	P55	I	Key matrix signal input.
46	P56	I	Key matrix signal input.
47	P57	I	Key matrix signal input.
48	VAREF	—	Analog reference voltage inputs(High)
49	VASS	—	Analog reference voltage inputs(Low)
50	VSS2	—	Ground
51	VDDÇP	—	Power supply
52	CLKSETTING	O	LCD segment outputs. (Connected to power supply.)
53-59	P81-P87	O	LCD segment outputs. (Not connected.)
60-67	P70-P77	O	LCD segment outputs. (Not connected.)
68-75	P60-P67	O	LCD segment outputs.
76-79	P90-P93	O	LCD segment outputs.
80-91	S11-S0	O	LCD segment outputs.
92-95	COM3-COM0	O	LCD common otput.
96	V3	O	LCD voltage booster pin. Capacitors are required between V3 pin and Ground.
97	V2	O	LCD voltage booster pin. Capacitors are required between V2 pin and Ground.
98	C1	O	LCD voltage booster pin. Capacitors are required between C0 and C1 pin and Ground.
99	C0	O	LCD voltage booster pin. Capacitors are required between C0 and C1 pin and Ground.
100	VDD2	—	Power supply

MECHANICAL EXPLODED VIEW-1/1


48
K
E
WIRE,230 2P
BATTERY SNAP
E
43
47
3
40
N
D
3
N
40
D
35
COVER,
TRANS
G
H
G
PWB
D
27
33
D
D
PLATE,
MOUNTING
D
32
31
D
30
I
29
C
17
25
PWB
24
C
23
C
15
7
D
6
6
D
6
7
6
C
C
C

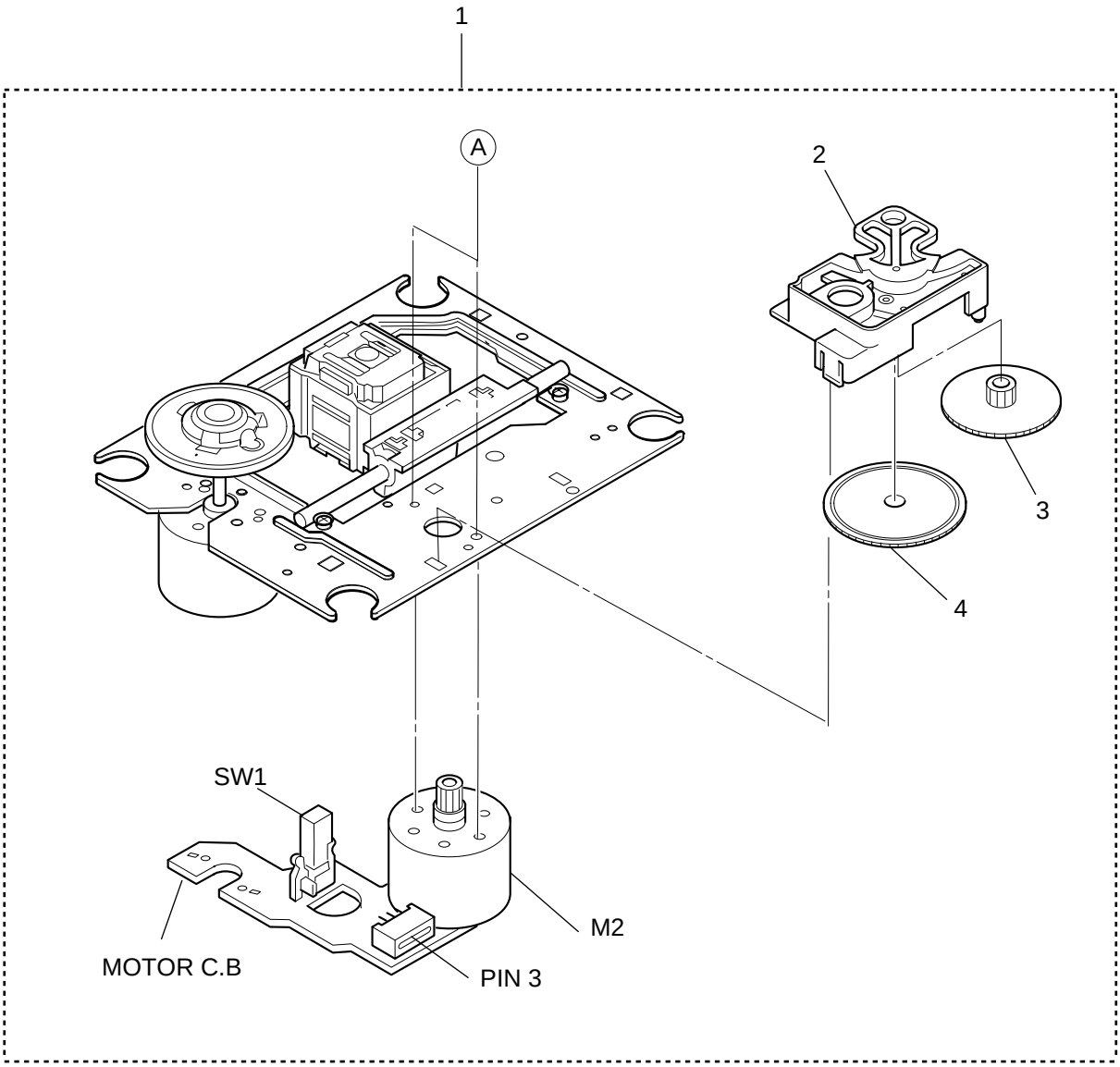
MECHANICAL PARTS LIST-1/1

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	8B-RD3-006-010		PLATE,SP DECO
2	8B-RD3-204-010		PLATE,DIFFUSER
3	8A-RU2-024-010		FOOT,RUBBER
4	8B-RD3-004-010		LENS,DISPLAY
5	8B-RD3-001-010		CABI,FRONT
6	8A-RU2-211-010		CLIP,SPEAKER
7	8A-RU2-662-010		SPKR,F66RZ3201
8	8B-RD3-007-010		BTN,SNOOZE
9	8A-RU2-022-010		RING,CD CHUCK
10	8A-RU2-021-010		BASE,CD CHUCK
11	8A-RU2-025-010		MAGNET
12	8A-RU2-020-010		HLDR,CD CHUCK
13	8A-RU2-023-010		PLATE,CD CHUCK
14	8B-RD3-003-010		LID,CD
15	8B-RD3-621-010		WIRE,ASSY 4P SP
16	8B-RD3-202-010		HLDR,LCD
17	8B-RD3-616-010		LAMP,8V 60MA
18	8B-RD3-010-010		BTN,BAND/FUNC
19	8B-RD3-008-010		BTN,ALARM
20	8B-RD3-012-010		BTN,SL/WE
21	8B-RD3-203-010		HLDR,CD CONT
22	8B-RD3-013-010		BTN,CD CONT
23	8B-RD3-011-010		BTN,TUN
24	8B-RD3-009-010		BTN,POWER
25	8B-RD3-620-010		WIRE,ASSY 6P CD MOTOR
26	8B-RD3-020-010		HLDR,ASSY CD DOOR LOCK
27	8B-RD3-618-010		WIRE,ASSY 6P VDD
28	8B-RD3-622-010		SOKET,6P VDD
29	81-689-212-010		PLATE,EARTH
30	8B-RD3-201-010		CHAS,CD
31	8B-RD3-021-010		GEAR,CD DOOR
32	8B-RD3-205-010		SPR,CD LID
33	8A-RU2-633-010		SW,LEAF-SW
34	8B-RD3-617-010		WIRE,FLAT 13P
⚠ 35	8B-RD3-635-010		PT,120/230V<CD2500EZSC>
⚠ 35	8A-RU2-663-010		TRANS,120/10<CD2500USC>
36	8A-RU2-616-010		ANT,BAR-ANT
37	8A-RU2-206-010		HLDR,BAR-ANT
38	8A-RU2-203-010		HLDR,BRKT-ANT
39	8B-RD3-623-010		SOKET,4P SP
40	8A-RU2-204-010		CORD,WASHER
41	8B-RD3-619-010		WIRE,FLAT 5P
42	8B-RD3-014-010		KNOB,RTRY VOL
⚠ 43	8A-RU2-664-010		AC CORD,SPT-2
44	8B-RD3-022-010		CUSH-R,CD MECHA
45	M8-ZZK-E90-070		DA11T3C
46	8Z-CDB-169-010		PANEL,CD SANYO
47	8B-RD3-002-010		CABI,REAR
48	8B-RD3-005-010		LID,BATT
A	87-B10-248-010		VT2+2.6-8 W/O SLOT
B	87-354-555-310		VT2+2-8 W/O SLOT
C	87-B10-248-010		VT2+2.6-8 W/O CR
D	87-B10-369-010		VT2+3-8 W/O CR
E	87-B10-370-010		VT2+3-10 W/O CR
F	87-B10-329-010		VT2+2.6-17
G	87-B10-375-010		W,3.2-12-0.8
H	87-B10-371-010		VT2+3-16 W/O CR
I	87-B10-374-010		V+3-6 W/O CR
J	87-B10-372-010		V+3-8 W/O CR
K	87-B10-373-010		V+2.6-5 W/O CR
L	87-B10-235-010		V+2-5 W/O CR
M	87-261-095-410		V+3-8
N	87-B10-376-010		W,3-8-0.8
O	87-B10-377-010		W,2.7-12.7-0.6
P	87-B10-041-010		NUT,3-5.5-2.4

COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Silver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange	GM	Metallic Green
YM	Metallic Yellow	DM	Metallic Orange	PT	Transparent Pink
LA	Aqua Blue	GL	Light Green	HT	Transparent Gray
HM	Metallic Gray	NH	Champagne Gold	M	Wood Pattern

CD MECHANISM EXPLODED VIEW-1/1 (DA-11T3C)



CD MECHANISM PARTS LIST-1/1 (DA-11T3C)

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	M8-ZZK-E90-070		DA11T3C
2	S2-121-A28-400		COVER GEAR
3	S2-511-A21-000		GEAR MIDDLE
4	S2-511-A21-100		GEAR,DRIVE
A	S1-PN2-03R-OSE		SCR PAN PCS 2-3

ACCESSORIES/PACKAGE LIST-1/1

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	8B-RD3-905-010		IB,EZ(EGF)C<CD2500EZSC>
1	8B-RD3-907-010		IB,EZ(PHNCZ)C<CD2500EZSC>
1	8B-RD3-906-010		IB,EZ(SID)C<CD2500EZSC>
1	8B-RD3-901-010		IB,U(3L)C<CD2500USC>

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AIWA CO.,LTD. 2–11, IKENOHATA 1–CHOME, TAITO-KU, TOKYO 110-8710, JAPAN TEL:03 (3827) 3111

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